FOR THE PUBLIC'S HEALTH:
A Plan of Action

Final Report of the
Ontario Expert Panel on SARS
and Infectious Disease Control
April 2004

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The Panel would also like to acknowledge and recognize the contribution of Dr. Colin D'Cuhna as an ex-officio Panel member through the first phase of our work.

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Foreword

One year before the release of this Report, the news was dominated by reports of SARS and of people forced into quarantine. We are acutely aware that we can neither do justice to nor ever sufficiently recognize the pain, suffering, and fear that gripped the lives of so many people such a short time ago.

How to put into words the emotions experienced by family members unable to stay with their ill and hospitalized loved ones. Or by children too young to comprehend why they could not hug their quarantined parents. Or by healthcare workers who suddenly became patients cared for by their colleagues.

The experience of SARS was an intensely personal one that touched thousands of lives – one that is now woven into our collective memory. We remember those who died. We pay tribute to those who fought the disease and to those who suffered in ways we may never fully comprehend.

As we look back to last year and as spring emerges again, and in the face of life's other challenges, it is all too easy for some of us to let this period drift away like some bad dream. Hoping none of us will have to face such a challenge again in our lifetimes.

Hope, however, is not enough. Promises, progress, and actions are required.

The most lasting tribute we can pay is to provide our society, our healthcare providers, and our communities with the tools, supports, and resources that many of us who fought the disease saw were clearly required.

We have taken the time to look back and learn what we believe are the key lessons from SARS. In this Final Report, we look forward and provide the remaining components of what we see as a blueprint for strengthening our healthcare system, and our ability to respond to emerging health risks and future emergencies. We do so with humility and with an acknowledgement of the magnitude of the challenges ahead. We also do so in the firm belief that change will happen and that the positive legacy of SARS will be that of a warning heeded.

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Executive Summary

Executive Summary

> *We have taken the time to look back and learn what we believe are the key lessons from SARS. In this Final Report, we look forward and provide the remaining components of what we see as a blueprint for strengthening our [healthcare] system, and our ability to respond to emerging health risks and future emergencies.*

The Expert Panel on SARS and Infectious Disease Control was established by the Minister of Health and Long-Term Care in May 2003. We were asked to identify the key lessons learned from the SARS outbreak and to provide recommendations regarding Ontario's capacity to manage public health emergencies and infectious disease threats in the future.

In carrying out our mandate, we attempted to ensure consistency with the framework for revitalization of public health in Canada set out in the Report of the National Advisory Committee on SARS and Public Health[1] and endorsed by the Standing Senate Committee on Social Affairs, Science and Technology.[2]

On December 15, 2003 we released our Initial Report, which provided a series of 53 recommendations requiring urgent action.[3] The Final Report builds on this initial advice and provides additional recommendations regarding the development of a centralized public health body for Ontario that would integrate into a comprehensive national public health framework. The text and recommendations in the Final Report were informed by meetings and discussions with a number of experts, healthcare professionals, patients and their families, as well as by a series of independent research projects.

We remain committed to the recommendations made in the Initial Report and urge that these be considered together with the recommendations found in this Final Report as part of a comprehensive framework.

In releasing this Report, the Panel urges Ontario to play an active role in the rejuvenation of public health at both the provincial and federal levels.

Public Health Renewal In Ontario

One of the most striking and urgent issues raised in our Initial Report related to human resource shortages, especially in public health. As such, we endorsed a comprehensive public health human resource revitalization strategy, including increased capacity for education and training, promotion of public health careers, and improved recruitment and retention strategies for Medical Officers of Health and their staff. This Report additionally recommends a review of the existing Public Health Research, Education and Development (PHRED) Program so as to build and expand upon its research and training components.

The Panel indicated in the Initial Report that it supports consolidating the number of Public Health Units on a regional basis within two years. We further recommend that any such consolidation be based upon core demographic and health status data, and an independent capacity assessment of: existing staffing levels; resources and skill sets at the local level; key operational, systemic and governance barriers to Public Health Unit functionality; and, appropriate steps to improved alignment with other key health service areas.

The Panel has acknowledged the issues surrounding the municipal role in funding of public health in Ontario. We urge the restructuring of the present municipal-provincial cost-sharing agreement to reflect between 75% and 100% provincial funding of public health within two to five years. In the short-term, full provincial funding of 180 positions committed to Public Health Units as part of the Ontario SARS Short Term Action Plan must be continued and processes for 100% funding of communicable disease programs in public health should be developed.

To support changes needed at both the local and provincial levels, the Panel endorses a review of the *Mandatory Health Programs and Services Guidelines*[4] with a view to enhancing compliance, consistent with the 2003 Annual Report of the Provincial Auditor.[5] As part of this review, consideration should be given to revising these guidelines so as to clarify their scope and the role and expectation of Public Health Units vis-à-vis the acute care sector and ensure the formal inclusion of public health risk communications.

Ontario Health Protection & Promotion Agency

In the Initial Report, we called for the establishment of a new public health agency for Ontario. We also recommended a series of measures to enhance Ontario's preparedness for a public health emergency, the development of a public health risk communications strategy, and the establishment of a technology infrastructure that enables information to reach all key healthcare stakeholders and practitioners in a timely fashion.

In expanding upon this initial vision, our Final Report further supports and recommends the creation of an Ontario Health Protection and Promotion Agency (the Agency) through new founding legislation. The Agency would develop dedicated capacity including the provincial Central Public Health Laboratory, a department devoted to communicable disease and infection control issues, emergency preparedness support, health promotion and injury prevention, research/knowledge transfer, epidemiology and surveillance, library services and supports, and communications. Appropriate linkages with federal public health bodies and research centres should be put into place.

The Central Public Health Laboratory should be co-located with the Agency and assume a key role in the area of communicable disease and infection control. While the initial focus should be on communicable diseases and infection control, an external evaluation of the Agency should be carried out within three years of its establishment, with a view to incorporating appropriate capacity in chronic disease prevention and control, health promotion and injury prevention. The Agency would also be required to present a plan for the formal expansion of its health promotion activities.

In order to increase the trust and profile required in a new agency, the Panel has proposed in this Report a series of important transparency and governance provisions for the Agency. The Agency's goals would embrace a series of key success factors based on the experiences of other jurisdictions and be one part of the broader public health renewal required across the province. In order to measure achievement against these goals, the Agency should produce and publicly disseminate a series of reports annually including a Performance Plan and a Report on the Health of Ontarians

With regards to the independence of the Chief Medical Officer of Health (CMOH), the Panel has proposed statutory amendments increasing the scope of authority for the CMOH to speak and report on matters of public health relevance and urgency, including where necessary to the Legislature.

We propose that the Agency operationally be headed by a Chief Executive Officer who would report to the CMOH and that legislative amendments be made to provide independence to the CMOH. Operational and financial management of the Agency should be carried out through a formal board structure, with membership appointed through a transparent process.

Communicable Disease and Infection Control

SARS highlighted to the Panel key longstanding shortfalls with respect to infection control, including a need for provincial standards, shortages of necessary human resources and training opportunities, and facility design barriers. In the Initial Report, the Panel recommended that a standing provincial committee be established to develop comprehensive infection control standards, develop mechanisms to ensure compliance with such standards, and to supervise infection control audits. We further recommended that infection control resources and expertise be made available on a regional basis through the creation of regional networks, and that a series of measures be undertaken to enhance training and education in infection control at all levels.

In this Report, the Panel urges that a standing Provincial Communicable Disease Committee and any necessary subcommittees be struck immediately, with an advisory role to the Chief Medical Officer of Health and thereby to the Minister of Health and Long-Term Care. This Committee would ultimately become a resource to a Department of Communicable Disease and Infection Control within the Agency.

The initial mandate of the Provincial Communicable Disease Committee and its subcommittees should be to establish standards and guidelines for infection prevention and control, including those relevant to implementing comprehensive infection control programs in all healthcare facilities and to infection control training at the facility level. Thereafter, the Committee should look to such things as: assisting in the refinement of provincial communicable disease protocols such as a pandemic influenza plan for Ontario; establishing core indicators for monitoring nosocomial infections to be collected on a province-wide basis; developing model infection control protocols and programs; and establishing its role with respect to audits by creating self-audit and peer audit systems.

The Provincial Communicable Disease Committee should be a resource to Regional Communicable Disease and Infection Control Networks to be established across Ontario, providing them with evidence-based standards and guidelines, among other things. The Panel sees a critical role of these Networks to be coordination of infection control and communicable disease activities on a regional basis. This would be achieved through such activities as assessing infection control practices and resources, assisting in the implementation of standards and guidelines, coordinating surveillance, supporting communicable disease initiatives and enhancing access to infection control expertise and resources.

In this Report, we have proposed a detailed model for Regional Communicable Disease and Infection Control Networks, including organizational structure, necessary resources, membership, and funding. We have also set out a number of core variables to be considered in determining the boundaries of these regional networks.

In addition, the Panel has discussed and made recommendations around facility design issues that need to be addressed within the regional context.

The activities of both a new provincial Committee and regional networks must be supported by a comprehensive provincial infectious disease surveillance plan together with an appropriate information technology infrastructure, as recommended in the Initial Report. The Panel has further recommended the development of an Ontario Public Health Information System (OPHIS) to enable sharing of relevant information, including surveillance and epidemiologic information.

Point of Care

In the Initial Report, the Panel recognized the immense impact that SARS had on healthcare providers and facilities. In so doing, we recommended that at least 70% of healthcare workers be employed on a full-time basis, that casualization of workers be minimized, and that psychological support and education programs for healthcare workers be put in place. We also endorsed a review of occupational health and safety policies, procedures and resources, with a view to developing best practices in relation to the interface between occupational health and safety and infection control.

Building upon these initial recommendations, we have further discussed and recommended employment strategies to reduce the effects of casualization and maximize capacity and sustainability of the healthcare workforce, to address employer and employee duty to care obligations, and to enhance psychological supports for workers.

In this Report, we have also focused on those using the healthcare system, namely patients and their families, through a discussion of the impact of SARS on health system utilization, the need for improved critical care capacity, and the need to provide supports to the individual by considering refined visitor policies and quarantine-related supports.

Implementation

The Panel recommended in its Initial Report that a single body be established and aided by a multi-disciplinary expert advisory group to oversee the implementation of the recommendations contained within that Report. The Panel further extends the mandate of this body to include implementation of the additional recommendations contained in the Final Report. In addition, in this Report we call for the creation of a transition team with the responsibility to finalize the operational design and implementation plan for the Agency.

To pull together the Initial and Final Reports and provide a complete picture of our deliberations and recommendations, we have developed a comprehensive and consolidated list of recommendations from both reports, which is included with this Executive Summary. We have also outlined a proposed staged implementation plan and anticipated costs for these consolidated recommendations as a separate chapter to this Report.

References

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5. Office of the Provincial Auditor of Ontario. *2003 Annual Report. Chapter 3: Report on value for money (VFM) audits: Section 3.09; Public health activity*. 2003. [pp. 217-244] [Online] Available at: http://www.auditor.on.ca/english/reports/en03/309en03.pdf . Accessed January 12, 2004.

Recommendations

Full Recommendations

The recommendations from the Initial Report have been renumbered sequentially to incorporate the new recommendations put forth in this Final Report. We have indicated in the box to the left of the Initial Report recommendations the original numbering, so that they may be easily referenced.

Therefore, this is the final and complete list of recommendations provided to the Government of Ontario in fulfillment of our mandate.

Public Health Agency Design

Health Protection and Promotion Agency

Rec #1 Initial Report

1. The Ministry should immediately proceed with developmental work to establish a Health Protection and Promotion Agency in Ontario. The Agency should be required to report annually to the legislature through the Chief Medical Officer of Health and include the following core components:

   a. the Ontario Public Health Laboratory;
   b. relevant existing Public Health provincial resources; and,
   c. a Division of Infection Control, whose mandate would include research, training, monitoring and best practice dissemination.

   The Agency should also be designed to enable linkages with the proposed Canadian Public Health Agency, the proposed National Public Health Laboratory Network, and appropriate research centres.

Agency Structure and Mandate

New

2. The Ministry should proceed with the establishment of an Ontario Health Protection and Promotion Agency that will be established and appropriately authorized through legislation as an agency of the Ministry of Health and Long-Term Care and with the following mandate:

   - to promote and protect the health of the people of Ontario, by generating timely and accurate scientific, laboratory, and epidemiological services, and providing expert advice and support on measures to improve the health of Ontarians; and

- to translate evidence and research into practical and effective assistance, tools, advice, and support to healthcare providers in Ontario.

New

3. The Ontario Health Protection and Promotion Agency should report to the Chief Medical Officer of Health who shall set strategic direction and also sit as an ex-officio member of the Agency's Board. A Chief Executive Officer, reporting to the Chief Medical Officer of Health, should be appointed to provide scientific direction and run the Agency on a day-to-day basis.

Core Functions

New

4. The core functions of the Ontario Health Protection and Promotion Agency, as outlined in the Report, should encompass:

    a. Communicable disease and infection control
    b. Public Health Laboratory
    c. Emergency preparedness and support
    d. Health promotion and injury prevention*
    e. Research/knowledge transfer
    f. Epi Centre and surveillance
    g. Library services and supports
    h. Communications

    * A full plan for appropriate incorporation should be brought forward by the Agency in Year 3 of operations.

New

5. The Central Public Health Laboratory should be co-located with the proposed Ontario Health Protection and Promotion Agency, and to the extent possible, examine appropriate partnership opportunities among the central Public Health Laboratory and appropriate academic health sciences centres while retaining the organizational integrity of the Central Public Health Laboratory. These opportunities could range from formalized agreements on surge capacity to potential collaboration on a broader scale.

New

6. The Ministry should conduct a review of the Public Health Research, Education and Development Program (PHRED) with the potential to expand both the research and training components.

New

7. Within three years of its establishment, the progress of the Ontario Health Protection and Promotion Agency should be externally evaluated.

Key Success Factors

New

8. The Ontario Health Protection and Promotion Agency should be based on the following key success factors as outlined in the Report:
   - transparency
   - accountability
   - anchoring a multi-disciplinary team of experts
   - integrity and credibility
   - cross-sectoral support
   - partnerships
   - resource and service culture

New

9. The Ontario Health Protection and Promotion Agency should be directed to prepare or assist in the preparation of annual reports. These include:
   - Report on the Health of Ontarians (potentially bi-annually)
   - Public Health Performance Report
   - audit report
   - Agency performance plan
   - infection control status reports

   These reports should be released publicly within 30 days of providing them to the Chief Medical Officer of Health.

New

10. The federal government, First Nations leaders, and the Ontario Ministry of Health and Long-Term Care should initiate discussion on a formal protocol relating to public health emergencies at the First Nations level with a view to completing a protocol within one year.

New

11. Ontario should vigorously pursue opportunities for co-location and collaboration between the proposed Canadian Public Health Agency and the Ontario Health Protection and Promotion Agency.

Agency Governing Board

New

12. A formal board structure should be adopted to oversee the financial and operational objectives of the Ontario Health Protection and Promotion Agency. Membership should reflect a suitable breadth of skills and representation. Core membership of the board should include at minimum, expert representation in the following areas:
    - laboratory
    - hospital sector
    - community provider
    - governance experience
    - public health
    - cross-appointment with federal government

    In addition, a minimum of one seat should be available for a public representative. Final board member determination should be made by the Minister of Health and Long-term Care, solely from a list of potential board members nominated or submitted through a transparent nomination process finalized by an external expert body. Members of the board should serve for fixed but staggered terms and be appointed by Order-In-Council.

    The first chair of the board shall be appointed by the Minister of Health and Long-Term Care on recommendation of the Chief Medical Officer of Health for a fixed term of up to five years.

Agency Founding Legislation

New

13. Ontario should develop founding legislation for the Ontario Health Protection and Promotion Agency and a detailed Memorandum of Understanding outlining the linkages to the Ministry, Emergency Management Ontario, and other relevant partners that shall at a minimum:

    - Entrench the role and structure of the proposed Ontario Health Protection and Promotion Agency including appropriate safeguards to ensure integrity and authority to ensure research products and reports are publicly released within a maximum of 30 days of being presented to the Chief Medical Officer of Health in the event that they have not otherwise been made public.

- Provide the Ontario Health Protection and Promotion Agency with the appropriate legal authority to collect, use, and disclose personal health information necessary for the Agency to perform the duties required to fulfill its mandate.

- Entrench the requirement for the Ontario Health Protection and Promotion Agency to produce and publicly disseminate an annual agency performance plan articulating goals and performance measures and progress made on an annual basis.

- Require the Ontario Health Protection and Promotion Agency to produce an annual audit that shall be tabled by the Minister at the earliest and appropriate time and subsequently with the Legislature.

Staged Implementation

New

14. Initial functions of the Ontario Health Protection and Promotion Agency should be implemented as outlined in the staged implementation section of the Report. These areas of focus include:
    - surveillance coordination and strategic planning
    - epidemiological analysis
    - public health laboratory
    - research and knowledge transfer
    - communications

New

15. The following interim steps should be taken in preparation for the transition of Central Public Health Laboratory capacity to the Ontario Health Protection and Promotion Agency:

    - The Ministry's Public Health Division should immediately hire dedicated laboratory liaison staff within the Division to work directly with the Central Public Health Laboratory to formalize and build improved linkages between the laboratory component and the surveillance and epidemiology components currently housed within the Ministry.

    - At the Central Public Health Laboratory level, senior medical leadership, at the M.D. or PhD level, should be recruited. A formal liaison function should be established to liaise with the Public Health Division.

- In addition to the need for securing a minimum of two senior medical microbiologists and medical director (as identified in the Panel's Initial Report), the Ministry should commit to adding an additional two medical microbiologist positions (for a total of four new positions) within the next 12 months.

- A video-conferencing link should be implemented between the Public Health Division in the Ministry and the Central Public Health Laboratory.

- A joint planning body should be established between the Public Health Division and Laboratories Branch within the Ministry, drawing on appropriate external expertise as required.

- A formal operational review of the Public Health Laboratory system should be undertaken focusing primarily on:

    a. identifying and defining the core testing services and mechanisms required to focus and tailor the testing of the Public Health Laboratory system to those of core Public Health Laboratory importance; and,

    b. determining what functional and procedural enhancements are required to ensure that the Public Health Laboratory system is able to perform at optimum level during both outbreak and non-outbreak situations. Components that should be examined include the need for technology supports, business processes and medium and long-term medical and scientific capacity requirements.

Independence of Chief Medical Officer of Health

Rec #2 Initial Report

16. The Ministry should immediately amend the *Health Protection and Promotion Act* to provide clear authorization to the Chief Medical Officer of Health to:

    a. report to the legislature; and,
    b. issue public comment on matters of significant public health importance independently of the Minister of Health and Long-Term Care.

    Such a provision should be enacted at the earliest possible opportunity.

New

17. The *Health Protection and Promotion Act* should be amended to provide the Chief Medical Officer of Health with the following protections:

    a. "The authority for the Chief Medical Officer of Health to issue public comment, including comment to the Legislature where required, without prior authorization by the Minister but where in the opinion of the Chief Medical Officer of Health, public health urgency requires action."

    b. "The authority for the Chief Medical Officer of Health to issue such research or reports, which in the opinion of the Chief Medical Officer of Health are pertinent to promoting awareness of issues pertaining to ongoing or emergent threats to the health of Ontarians and/or the capacity of the province to respond to such threats. Outside of cases of health urgency, the Minister shall be provided by the Chief Medical Officer of Health with a review period of not more than thirty days of such material prior to public release."

Rec #3
Initial
Report

Public Health Human Resource Revitalization Strategy

18. It is recommended that Ontario immediately initiate discussions with the Association of Local Public Health Agencies (alPHa), Association of Municipalities of Ontario (AMO), and existing federal/provincial/territorial (F/P/T) processes, to design a Public Health Human Resource revitalization strategy. The strategy should contain the following components:

    a. The development, through the Ministry of Health and Long-Term Care and the Ministry of Training, Colleges and Universities, of an increased capacity for the education and training of public health professionals. This could include increasing enrollment numbers at educational institutions as well as increasing post-graduate training positions or residencies.

    b. The development and support of a provincially funded training and education program for existing public health staff, with a focus on infection control. This should build upon the existing Public Health Research, Education and Development (PHRED) program. Special emphasis should be placed on promoting cross-training opportunities between public health, acute care, long-term care, and other sectors.

c. The development, in partnership with HRDC and educational institutions, of a comprehensive campaign to promote public health careers in Ontario.

d. The development of re-entry training positions in community medicine such that practitioners currently practicing in other specialties can become qualified to work in public health.

e. The development of bridge training programs intended to update the skills and qualifications of skilled individuals with previous public health experience. This should be offered together with incentives to recruit back such individuals currently practicing in other fields.

f. A review of recruitment and retention strategies for Medical Officers and Associate Medical Officers of Health, including remuneration.

The Ministry should provide a progress report on this strategy to the Minister by June 1, 2004.

Provincial/Municipal Funding

Rec #4 Initial Report

19. Ontario should immediately dedicate 100% provincial funding beyond March 31, 2004 for the 180 positions committed to Public Health Units as part of the Ontario SARS Short-Term Action Plan.

Ontario should further develop an independent process and establish timelines for the establishment of 100% funding of all communicable disease programs in public health. This should be completed by December 31, 2004.

All such funding should be conditional on the Public Health Units supporting re-deployment of these communicable disease resources in the event of a public health emergency, as part of constructing province-wide public health surge capacity.

Rec #5 Initial Report

20. Ontario should immediately re-structure the existing cost-sharing agreement for public health with the municipalities to move to between 75% and 100% provincial funding of public health. Programs, including communicable disease programs funded at 100% by the province should be protected at 100%.

Implementation of the new cost-sharing agreement should be phased in within two to five years.

Public Health Units

Rec #6
Initial
Report

21. The Ministry should review, in conjunction with the Medical Officers of Health, the Association of Local Public Health Units and the Association of Municipalities of Ontario, the existing number of public health agencies in the province. Within two years, the Ministry should act on the results of the review to consolidate the number of Public Health Units to between 20 and 25 units, retaining local presence through satellite offices.

Public Health Unit Level

New

22. The Ministry should commission a review of existing local Public Health Units. The review should incorporate expert input, and comparisons to appropriate jurisdictions to:

    - determine the required core capacities to be available at the health unit level, based upon core geographic, health status, health need, cultural mix, and core health determinants;

    - identify key operational, systemic, and governance barriers that contribute to or may impede the successful functioning of local health units; and,

    - recommend appropriate models of health unit consolidation where such consolidation is rational based upon the evidence generated above and would contribute to strengthening local public health resources.

Health Protection and Promotion Act – Compliance

Rec #7
Initial
Report

23. The Ministry should immediately examine approaches to strengthen compliance with the Health Protection and Promotion Act and associated *Mandatory Health Programs and Services Guidelines*, in particular with regard to the resourcing and provision of mandatory health programs and services.

New

24. As part of the review of the *Mandatory Health Programs and Services Guidelines* for public health, it is recommended that consideration be given to the inclusion of public health risk communications as one of the program standards.

Public Health Division Capacity Review

Rec #8 Initial Report

25. The Ministry should immediately undertake a comprehensive external review of existing provincial Public Health Division capacity. The Ministry should act on recommendations arising from this review to revitalize provincial public health capacity within the context of public health renewal.

Performance Review for Public Health

Rec #9 Initial Report

26. Ontario should establish an annual performance report for public health in Ontario to be tabled to the legislature and disseminated to the public. This report should be prepared by an appropriate third-party research organization body and should indicate the status of the following areas:
    a. human resources
    b. information technology
    c. facility-acquired infections
    d. mandatory program and service compliance
    e. health of the population
    f. central epidemiological capacity

Communicable Disease and Infection Control

Standards, Accreditation and Monitoring

Rec #11 Initial Report

27. The Ministry should immediately establish a standing Provincial Infection Control Committee that would report to the Chief Medical Officer of Health. The Committee would have the following functions:

    a. Supervise audits already underway of hospital infection control policies, programs and resources, and undertake additional audits in remaining Ontario healthcare facilities and organizations, to be completed by the summer, 2004.

    b. Informed by the results of these infection control audits, develop comprehensive provincial infection control standards for all healthcare facilities in Ontario, including acute and non-acute care hospitals, long-term care facilities, and primary care/community settings. Guidelines should be completed by October 31, 2004.

    c. Develop standards in collaboration with Health Canada.

    d. Develop appropriate mechanisms to ensure compliance for both existing infection control standards and new comprehensive provincial infection control standards.

Rec #12
Initial
Report

28. The Ministry, together with the Provincial Infection Control Committee, and in conjunction with the Ontario Hospital Association, the Institute for Clinical Evaluative Sciences (ICES), and the Community and Hospital Infection Control Association, should develop core indicators for monitoring facility-acquired infections. This data should be reported as part of the annual status report on public health.

Provincial Communicable Disease Committee

Implementation and Reporting

New

29. The standing Provincial Communicable Disease Committee should be in place by June 30, 2004. Necessary subcommittees should also be created, including a Provincial Infection Control Subcommittee. The terms of reference of the Provincial Communicable Disease Committee should take into account and incorporate, as appropriate, the mandate and membership of the Advisory Committee on Communicable Diseases.

New

30. The Provincial Communicable Disease Committee should initially report to the Chief Medical Officer of Health and transition to reporting to the Director of the Department of Communicable Disease and Infection Control within the Ontario Health Protection and Promotion Agency once it is operational.

New

31. The Provincial Communicable Disease Committee should establish communication pathways and protocols with the Regional Communicable Disease and Infection Control Networks that are bi-directional in nature. These pathways and protocols should be capable of integrating with other communication and information technology supports created as part of the infrastructure of the Ontario Health Protection and Promotion Agency, as appropriate.

New

32. The Provincial Communicable Disease Committee should establish a dedicated webpage, with access by the public as well as by healthcare providers. The webpage should post all approved standards and guidelines as well as those under development, in addition to any relevant advisory statements.

Membership

New

33. The first chair and core members of the Provincial Communicable Disease Committee should be appointed for fixed but staggered terms by the Minister of Health and Long-Term Care upon the recommendation of the Chief Medical Officer of Health through a transparent nomination process. Once the Ontario Health Protection and Promotion Agency is established, appointment should be through the Board of Directors of the Agency.

    Core membership of the Provincial Communicable Disease Committee should include at a minimum representation from:
    - infection control
    - infectious disease
    - microbiology
    - occupational health and safety
    - public health
    - epidemiology

    with both acute care and non-acute care interests represented.

    Non-core membership of the Provincial Communicable Disease Committee should include the Chief Medical Officer of Health and at least one representative from the Regional Communicable Disease and Infection Control Networks, such as the chair of a Regional Coordination Committee.

Functions and Mandate

New

34. The initial mandate of the Provincial Communicable Disease Committee should be to establish standards and guidelines for infection control applying evidence-based best practices.

    a. The first infection control standards and guidelines to be developed by the Provincial Communicable Disease Committee should:

        - articulate the core foundational elements for comprehensive infection control programs within acute and non-acute facilities;
        - address the necessary human resources and skill sets to implement comprehensive infection control programs; and,

- address infection control training at a facility level, including where appropriate the development of standardized educational materials in conjunction with trained educators.

As a supporting measure, the Ministry must immediately increase and fund education programs in infection control and must develop additional strategies to recruit infection control professionals.

b. The Provincial Communicable Disease Committee should, through phasing in of the second portion of its mandate, develop standards and guidelines relating to specific infection prevention and control practices, such as:
   - handwashing techniques
   - cleaning and disinfection protocols
   - specific surveillance programs
   - isolation techniques
   - proper use of personal protective equipment
   - facility design, including emergency room design

c. The Provincial Communicable Disease Committee should, through phasing in of the third portion of its mandate:

   - establish core indicators to be reported by each type of facility across Ontario;

   - develop self-audit and peer audit systems for use by facilities and organizations;

   - develop model infection control protocols or programs as appropriate and as required;

   - advise the Ministry and/or the Ontario Health Protection and Promotion Agency on infection control and communicable disease research priorities for Ontario; and,

   - advise the Ministry on relevant infection control and communicable disease policy.

New

35. At the request of the Chief Medical Officer of Health, the Provincial Communicable Disease Committee should begin to act as an advisory body to the Ministry on specific issues, such as refining a pandemic influenza plan for Ontario and issuing advisory statements related to infection control and communicable disease issues.

Regional Communicable Disease and Infection Control Networks

Rec #10 Initial Report

36. The Ministry should establish a process to develop Regional Infection Control Networks across Ontario with a designated hospital and Public Health Unit as joint leads in the development process. The networks should include but not be limited to Public Health Units, hospital infection control practitioners, Emergency Health Services, long-term care, and community-based healthcare providers.

Mandate

New

37. Each Regional Communicable Disease and Infection Control Network should include the following core activities as part of its mandate:

- identify existing infection control resources and practices within the region to determine core capacity and determine gaps;
- assist network members in implementing standards and guidelines developed by the Provincial Communicable Disease Committee;
- coordinate surveillance of core indicators;
- support activities of Public Health Units as these are mandated under the *Health Protection and Promotion Act;* and,
- report regional data and information centrally.

Membership

New

38. Membership in each Regional Communicable Disease and Infection Control Network should occur at the facility or organization level, and include at a minimum:
    - acute and non-acute care hospitals
    - long-term care facilities
    - Public Health Units

    Additional membership by laboratories, ambulance services, and community-based services and providers is to be encouraged as network capacity and infrastructure develop.

Implementation

New

39. The Ministry should immediately commit to appropriate funding for the regional network initiatives already underway in Ontario. Further dedicated funding should be set aside immediately toward the development of additional networks across the province, as part of a multi-year plan for the implementation of networks on a province-wide basis. This funding should be part of a targeted funding envelope.

    a. Building upon a review of the experiences of the preliminary network initiatives, the Ministry and networks under development should draw resources and learnings to support the subsequent refinement of networks across the province.

    b. As an enabler and preliminary step to the development of Regional Communicable Disease and Infection Control Networks across Ontario, the Ministry should immediately sponsor additional planning sessions that bring together relevant stakeholders from acute care and public health, among others.

New

40. Regional stakeholder organizations integral to the development and implementation of Regional Communicable Disease and Infection Control Networks should commence with the following activities, through phasing in of each network's mandate:

    a. Establishment of a steering committee for each network with core membership to include at a minimum the following:
       - acute care lead organization
       - Public Health Unit(s)
       - infection control practitioners
       - physician experts
       - microbiology
       - occupational health and safety
       - the regional coordinator
       - the medical director

    b. Selection of an appropriate acute care lead organization. Public Health Units should maintain their lead status on matters that clearly fall within their legislated mandate, such as the creation of outbreak response plans, and Communicable and Reportable Diseases surveillance, investigation, and response.

c. Development of a local vision and operational plan by the steering committee.

d. Designation of projected network boundaries taking into account the following factors in defining the boundaries of the Regional Communicable Disease and Infection Control Networks:

  - location and amount of core capacity in infection control expertise;
  - rational patterns of patient movement, including referral patterns;
  - existing service clusters;
  - demographics to be served by the network, including population and bed number; and,
  - core geographical boundaries

e. Submission of the operational plan to the Ministry for funding .

New

41. A mechanism should be established to ensure that all Regional Communicable Disease and Infection Control Networks are able to communicate and link with one another.

Facility Design

Rec #13 Initial Report

42. To ensure the appropriate supply and distribution of negative pressure rooms between and within hospitals, the Ministry should immediately undertake an independent evidence-based needs assessment, reporting back to the Minister by March 1, 2004. Informed by the results of this assessment, the Ministry must ensure that there is a sufficient supply of negative pressure rooms on a regional basis.

New

43. The evidence-based needs assessment should be undertaken using standards and guidelines developed through the Provincial Communicable Disease Committee. As an additional support to the needs assessment, the Ministry should develop and maintain a current inventory of the number and location of all existing negative pressure and isolation rooms in Ontario.

New

44. Upon the completion of clear standards for infection control in facility design and a review of existing capacity, it is proposed that the Ministry establish a specific dedicated fund of one-time costs, increasing from $10m in Year 2 to $40m in Year 4, to address priority remediation requirements. Criteria for prioritization should be set based on recommendations from the PCDC and/or appropriate sub-committees.

New

45. The Ministry, through the Ontario Health Technology Advisory Committee, the Medical Advisory Secretariat, and additional relevant external expertise, should immediately establish a process to evaluate the appropriate use and effectiveness of new technology applicable to isolation precautions, such as portable air filtration units and portable single patient isolation units.

Rec #14 Initial Report

46. The Ministry must initiate a collaborative process with the Ontario Hospital Association to identify hospital physical plant barriers to effective infection control and develop a multi-year implementation plan for their removal. Emergency rooms should be examined as a first priority, to be followed by intensive care units and wards.

Training and Orientation

Rec #15 Initial Report

47. The Ministry, in conjunction with the Ministry of Training, Colleges and Universities, should ensure adequate funding for the expansion of existing courses in infection control so that they can be made more widely available and accessible to all health professionals. This funding should encompass the:
    a. development of an online format for the existing course
    b. development of distance education initiatives
    c. provision of adequate reimbursement for the costs of attending or participating in such a course.

    Such funding should be in place April 1, 2004.

Rec #16 Initial Report

48. The Ministry must immediately develop strategies to achieve a minimum target of one infection control practitioner per 250 acute care and long-term care beds, and to work toward achieving a target of one infection control practitioner per 120 acute care and long-term care beds within three years. These strategies must include mechanisms for recruitment and retention of infection control practitioners.

Rec #17 Initial Report

49. The Ministry should support the development of 'train the trainer' initiatives by providing adequate funding to allow existing experienced and qualified infection control practitioners to act as educators of other healthcare professionals in infection control principles. The necessary level of such funding should be determined and made available by April 1, 2004.

Rec #18 Initial Report

50. The Ministry should actively engage and support regulatory bodies and professional associations in their review and updating of standards for the infection control education and maintenance of core competencies of all healthcare workers. The Ministry should also work to develop standardized educational programs that reflect these principles. The development of such standards should be complete by June 30, 2004.

Rec #19 Initial Report

51. The Ministry, the Ministry of Training, Colleges and Universities, the Council of Faculties of Medicine, the Canadian Association of Schools of Nursing, and other relevant bodies should work together to define core curricular elements of infection control education for all healthcare education programs and begin steps to establish these elements within such programs. The Ministry should establish a working body to accomplish these goals by February 1, 2004, and curricular outlines should be in place by June 30, 2004.

Funding of Infection Control Programs

Rec #20 Initial Report

52. The Ministry, in collaboration with the Ontario Hospital Association, the Ontario Long Term Care Association, and the Ontario Association for Non-Profit Homes and Services for Seniors, should develop mechanisms to provide targeted funding for infection control programs within facilities and organizations, such as the development of a hospital Priority Program for infection control. This funding should provide for necessary human resources, such as infection control practitioners and infectious disease specialists. A status report on the development of these mechanisms should be provided to the Minister by June 30, 2004.

Emergency Preparedness

Rec #21 Initial Report

53. The Ministry should immediately create an Office of Health Emergency Preparedness (OHEP) with appropriate staffing and authority and with a formal link with the Ministry of Community Safety and Correctional Services. The office should be established by April 1, 2004 and should:

    a. report to the Deputy Minister through a Health Emergency Preparedness Committee. The Committee should oversee the establishment of the office and its mandate, and provide ongoing advice and strategic direction for the OHEP;

    b. provide leadership with respect to the Ministry's emergency preparedness activities; and,

    c. ensure implementation of the recommendations below within the timelines stipulated. Until such time as the OHEP is operational, the Ministry must act on these recommendations in its place.

54. Once established, the OHEP should act as the Ministry liaison with Health Canada, Emergency Management Ontario, and other relevant organizations regarding public health emergency preparedness. Specifically, the OHEP should begin to work closely with Health Canada in three areas:

    a. Ensuring the relevance and readiness of any emergency stockpile system and of appropriate provincial linkages and protocols as required for the purposes of coordination.

    b. Developing the Health Emergency Response Team program.

    c. Harmonizing federal and provincial emergency preparedness and response capacities for public health emergencies.

Rec #23 Initial Report

55. The Ministry should move promptly to review and assess specific areas of emergency preparedness, and create action plans and recommendations through advisory committees with clinical and operational expertise. The key areas for review and assessment are:

    a. The development of emergency protocols for patient transfer, including an objective evaluation of the Patient Transfer Authorization Centre system.

    b. A review of the accuracy and utility of the CritiCall Program. This should include an analysis of the role that the CritiCall Program and Central Bed and Resource Registry could play in the management of future outbreaks and the checks or mechanisms required to ensure data accuracy.

c. The development of formal emergency protocols for rapid discharge of hospital Alternate Level of Care patients from hospital to alternative sites, specifically long-term care facilities. This should include a review and analysis of the use of the category 1A crisis designation under the regulatory provisions governing the placement coordination system under long-term care legislation.

d. Provincial, regional, and institutional capacity to obtain and distribute supplies and equipment during infectious disease outbreaks and other public health emergencies.

The Ministry should report the results of the review and present the accompanying action plans to the Minister by March 1, 2004.

Rec #24 Initial Report

56. Once the OHEP is established, it should have a dedicated website to raise public awareness and promote the transparency of the Ministry's preparedness activities. The OHEP should use this website to post reference documents, appropriate contingency plans, and promotional materials concerning Ministry and health sector emergency preparedness. Until the OHEP is fully operational, the Ministry should immediately post all contingency plans on the Ministry website.

Rec #25 Initial Report

57. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should immediately update and test a generic plan or standard operating protocol for the provincial response to infectious disease outbreaks and public health emergencies, including bioterrorism. This plan should be complete by June 2004 and should be posted on the OHEP or Ministry website as soon as it is complete. As an interim measure, the Ministry should post on its website a summary of the main roles and responsibilities of government and independent organizations in planning *and responding to public health emergencies* by February 1, 2004.

Rec #26 Initial Report

58. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should broadly disseminate contingency plans for pandemic influenza and smallpox by March 15, 2004. These plans should be posted on the Ministry website.

Rec #27 Initial Report

59. a. The Ministry, together with professional associations, regulatory colleges, and the OHEP in a coordinating and monitoring role once established, should continue to develop provincial registries to provide rapid deployment of healthcare personnel. An action plan for developing these registries should be presented to the Minister by February 1, 2004. Registries should be tested and evaluated within 12 months of their inception.

    b. The Ministry should initiate the ongoing development of cross-jurisdictional mutual aid agreements with other provinces and territories that provide for appropriate health human resources deployment, inter-jurisdictional licensing of professionals, compensation and remuneration agreements, and provision of supplies and equipment. The Ministry should provide a status report on this review by April 1, 2004.

Rec #28 Initial Report

60. The Ministry, in conjunction with the Ontario Hospital Association (OHA), Canadian Hospital Association (CHA), and other appropriate organizations, should immediately examine the development of a specific code for Infectious Disease Outbreaks. Ideally, this code would be adopted nationally and be reflected in appropriate contingency planning at the provincial and federal levels.

Rec #29 Initial Report

61. The Ministry, along with the Ministry of the Attorney General and other appropriate Ministries, should conduct a thorough review of existing emergency powers and related legislation with a view to establishing a graduated system for responding to health emergencies. A status report on this review should be submitted to the Minister of Health and Long-Term Care and the Minister of Community Safety and Correctional Services by March 1, 2004.

    As a second phase, the Ministry and the federal government should work together to ensure harmonization of emergency powers legislation by October 2004.

New

62. Upon completion of the legislative review, the Ministry should develop and implement heightened alert schemes for public health emergencies utilizing a range of methods as appropriate.

Health System Impact

New

63. The Ministry should be encouraged to formalize post-event evaluations using comprehensive and appropriate health system/service data to refine on an ongoing basis:

    a. provincial and local approaches to outbreaks and health emergencies; and,

    b. approaches to system recovery based on scientific and clinical evidence related to patient outcomes and access to health services e.g., returning healthcare institutions to pre-event operations.

Critical Care

New

64. The Ministry should develop an enhanced evidence-based approach to measure and monitor surge capacity and to ensure critical care accessibility to Ontario's critical care resources during periods of sudden and unexpected demand (surge) and usual demand.

Visitor Policy

New

65. The Ministry should, in collaboration with the Ontario Hospital Association, Ontario Long-Term Care Association and Ontario Association of Non-Profit Homes and Services for Seniors and other appropriate associations, establish guidelines for developing policies regarding visitor restrictions during a significant service interruption or public health emergency. The sample visitor policy included in this Report may be used to inform this process. Policies developed should recognize the importance of social support and should differentiate between visitors and access to key family members who are integral to the provision of patient care. There should be mechanisms to address exceptional circumstances.

New

66. The Ministry should, in collaboration with relevant associations, support the provision of clear and consistent information about visitor restrictions when these are in effect on a large scale and ensure that the rationale for these is made available to the public through appropriate vehicles.

Quarantine

New

67. Public health officials should ensure that during any period of quarantine, regardless of the scope, that there is formal and regular two-way communication between Public Health Units and individuals and families under quarantine.

New

68. The Government of Ontario, as part of collaborative work with the federal government in relation to providing financial assistance during a public health emergency, should develop policies concerning appropriate compensation for individuals under quarantine.

Communications

Rec #30
Initial
Report

69. By February 15, 2004, the Ministry should ensure that a health sector communications infrastructure is in place to reach all key stakeholders in a health emergency. This infrastructure should enable use of e-mail, facsimile, Internet and other technologically advanced modalities. It should be two-way, multi-functional and enable the Ministry to reach healthcare practitioners, healthcare organizations and institutions, support staff, educational institutions, emergency medical services, professional associations, licensing bodies and unions. This infrastructure should be tested and evaluated by March 31, 2004.

    a. This infrastructure should facilitate the development of a formal Public Health Alert Network (PHAN), to provide communications concerning infectious disease outbreaks and public health threats to all healthcare providers.

    b. As critical to enabling this infrastructure, electronic literacy should be established as a basic standard of practice for all newly graduated healthcare practitioners within two years. Methods of ensuring the electronic competency of existing healthcare providers should be explored in collaboration with professional regulatory colleges within three years.

New

70. As part of the Ontario Health Protection and Promotion Agency, a Public Health Alert Network (PHAN) should be established and maintained to issue different types of health messages (alert, advisory, update) to key stakeholders based on agreed protocols. The Ontario Health Protection and Promotion Agency would activate PHAN on the direction of the Chief Medical Officer of Health as a means of supporting crisis and emergency response as well as preparedness at the local and provincial levels.

Rec #31
Initial
Report

71. By January 15, 2004 the Ministry should review and update provincial crisis communications protocols to support the dissemination of information during a health emergency. These protocols should ensure:

    a. Early designation of a credible and consistent source of spokesperson(s) at the provincial level so as to deliver uniform and clear messages.

    b. Mechanisms are in place for two-way communications, which allow recipients to ask questions and receive clarification.

    c. Key personnel have specific communications training.

    d. Communications approaches are rapidly available in diverse languages and formats.

Rec #32
Initial
Report

72. By March 1, 2004, the Ministry should develop a provincial public health risk communications strategy as part of overall contingency planning for a health emergency. This strategy should be based upon international best practices in risk communications, and should be shared with local and federal governments, and healthcare organizations to aid in the coordination of efforts and understanding of respective roles. The basis of this communications strategy should:

    a. Build on and upgrade the use of proven effective communications vehicles, such as the use of web-based systems during SARS.
    b. Include targeted approaches and tools for different audiences, such as healthcare providers and patients.
    c. Be based upon strong links with Public Health Units.
    d. Encourage and build upon public health risk communications networks.
    e. Clearly identify provincial spokeperson(s) in a health emergency, building on trust and credibility.
    f. Ensure that communications methods used during a health emergency are practical in nature. If directed to healthcare workers, communications should include proper techniques and best practices.
    g. Incorporate effective means of educating the public about necessary screening measures, changes to visitor policies, and temporary restrictions of healthcare services. This should include the production of standardized material and notices to distribute to patients.
    h. Make provisions for briefing sessions between the Ministry and healthcare providers, in the form of a webcast or other real-time communication mechanism, shortly before any public broadcast on urgent matters of public health.

i. Clarify, update and streamline policies and procedures regarding the use of the media in an emergency. This should include the continued use of effective media buying services to deliver public service messages.
j. Optimize use of health information hotlines for the public as part of overall contingency planning.
k. Include mechanisms to evaluate performance.

New 73. The Ontario Health Protection and Promotion Agency should provide risk communications support and advice to the Ministry, Public Health Units, and other local healthcare providers and organizations including the Regional Communicable Disease and Infection Control Networks. To this end, the Ontario Health Protection and Promotion Agency should:

- support the Ministry of Health and Long-Term Care by providing technical and scientific advice regarding risk communications in general and with respect to specific topics or issues; and,

- establish and maintain a Risk Communications Network with the aim of increasing practitioners' (public health and communication) capacity to undertake and evaluate risk communication activities.

Rec #33 Initial Report

74. The Ministry should continue to liaise with Health Canada to ensure consistency and to clearly designate points of contact regarding risk communications plans. Formal memoranda of understanding should be reviewed and updated by March 1, 2004 so that they clearly outline roles and responsibilities. The Ministry should commit to review and update such agreements on a regular basis. Such reviews should include appropriate public health expertise and representation from OHEP.

Rec #34 Initial Report

75. The Ministry should immediately ensure that any written communication to healthcare providers during a health emergency is:
a. clear, concise, and operationally viable
b. based upon scientific evidence
c. supported by mechanisms for two-way communications and clarification.

Rec #35 Initial Report

76. By March 1, 2004, the Ministry should develop an enhanced plan to educate the public about possible or actual threats to public health and appropriate infection control measures. Healthcare organizations and professional associations should be engaged in developing and implementing this plan to ensure coordination of effort and to identify the most effective tools for healthcare providers to use in communicating with the public.

New

77. The Ministry should ensure that each Public Health Unit maintains core communications capacity that includes:

    a. public health risk communications;

    b. crisis communications during a health emergency as part of overall contingency planning;

    c. production and dissemination of public health materials;

    d. translation as determined by local need and coordinated with the Agency;

    e. participation in local and provincial networking opportunities for health communicators, such as a Risk Communications Network; and

    f. media relations.

New

78. Public Health Units should also be appropriately supported to develop processes and mechanisms at the local level to network and share information with other health communicators.

Surveillance

Rec #36 Initial Report

79. The Ministry should build on work undertaken to-date and develop a comprehensive, provincial infectious disease surveillance plan by June 30, 2004. This work should:

    a. be carried out by a multi-disciplinary group, which includes scientific, government, information technology and healthcare partners, and which is accountable to the Minister of Health and Long-Term Care;

b. involve aligning and clarifying the roles of all post-SARS provincial advisory committees with working groups examining the issue of disease surveillance;

c. examine any opportunities or barriers to using existing tools such as Telehealth and Telemedicine;

d. include province-wide surveillance for facility-acquired infections.

Rec #37 Initial Report

80. The Ministry must ensure that an appropriate information technology infrastructure is in place to fully support the provincial infectious disease surveillance plan by June 30, 2004.

New

81. An ongoing process and mechanism should be developed to disseminate information to stakeholders including surveillance and epidemiological information, research, best practice information, etc. The Ontario Health Protection and Promotion Agency will develop and support an Ontario Public Health Information System to enable this information sharing, with the aim of providing a specific portal to epidemiological and surveillance information as well as with analysis and trend information (including specific reports) to support practitioners and decision-makers.

Rec #38 Initial Report

82. The Ministry should expedite the full implementation of the Integrated Public Health Information System (iPHIS), together with any required design modifications, across all Public Health Units in the province by June 30, 2004.

Rec #39 Initial Report

83. The Ministry must move rapidly to fully implement the necessary information technology supports to allow for contact tracing and quarantine management by Public Health Units by June 30, 2004. If this cannot be accomplished through design modifications to iPHIS, other suitable information technology platforms must be used.

Rec #40 Initial Report

84. The Ministry should establish a working group with representation from healthcare stakeholders, researchers, and the Ministry to review on an urgent basis all data access and data sharing protocols between Public Health Units, the Ministry, municipalities, and the federal government. This review should identify how and to whom identifiable personal information is authorized to flow in the event of an outbreak. The working group should submit a report to the Minister by March 31, 2004 outlining the common data sharing structure, reporting relationships, and other common requirements of the data access and sharing protocols.

Rec #41 Initial Report

85. The Ministry should undertake a detailed legislative review of the *Freedom of Information and Protection of Privacy Act* and the *Municipal Freedom of Information and Protection of Privacy Act* in the context of:

    a the reporting requirements set out under the *Health Protection and Promotion Act*;

    b. identifying potential barriers to the sharing of information in appropriate and timely manner; and,

    c. ensuring appropriate protections for personal information.

    This review should be completed by March 31, 2004.

Health Human Resources

Enrollment

Rec #42 Initial Report

86. The Ministry, together with the Ministry of Training, Colleges and Universities and professional bodies, should continue to support new initiatives to increase the enrollment numbers of key health professions, including medicine, nursing, and respiratory therapy. In addition to work already underway, attention should be given to enhancing training opportunities in epidemiology, medical microbiology, occupational health and safety, community medicine, critical care, emergency and public health. Plans for increased training capacity in these key areas should be in place for the 2005/2006 academic year and reported publicly.

Staffing Strategies

Rec #43 Initial Report

87. The Ministry must immediately fund a minimum of two additional Medical Microbiologist positions for the Ontario Public Health Laboratory.

Rec #44 Initial Report

88. The Ministry, in collaboration with professional regulatory colleges and professional associations, should begin to develop new models for the efficient utilization of existing health human resources during a health emergency. As part of this process, consideration should be given to creative staffing models, and using professionals to their full scope of practice.

Rec #45 Initial Report

89. The Ministry should continue to establish sustainable employment strategies for nurses and other healthcare workers to increase the availability of full-time employment. Progress reports should be issued on an annual basis with a final goal of greater than 70% full-time employment across all healthcare sectors by April 1, 2005.

New 90. As part of the employment strategies to reduce the effects of casualization of the healthcare workforce, approaches such as creating centralized and integrated resource teams comprised of full-time employees, providing opportunities for cross training, increasing base staff allocation, and creating workforce databases should be considered.

Occupational Health and Safety

Rec #46 Initial Report 91. The Ministry, together with the Ministry of Labour, should initiate a joint review of current Occupational Health and Safety (OHS) policies, procedures, and resources in the healthcare sector. This should be completed by June 30, 2004.

Informed by the results of this review, the Ministry, the Ministry of Labour, healthcare providers, and relevant professional organizations should look to developing best practices in OHS, with a view toward defining the role of OHS during an infectious disease outbreak and the most appropriate interface between OHS and infection control programs.

Rec #47 Initial Report 92. The Ministry, together with the Ministry of Labour and professional associations, should support the ongoing development of best practices for the use of personal protective equipment by December 31, 2004. The Ministry should also ensure that, in conjunction with healthcare provider organizations, adequate vehicles are in place to educate appropriate groups of healthcare workers as to the proper use, and the associated evidence behind such uses, of personal protective equipment. In addition, Ontario should support both public and private sector research initiatives with respect to the efficacy and adverse effects of personal protective equipment.

New 93. Appropriate ministries within the Government of Ontario, in collaboration with relevant professional associations, should develop and/or disseminate clear shared guidelines regarding duty to care obligation of both employers and healthcare workers during a public health emergency. A sample duty to care policy included in this Report may be of use to inform this process.

New 94. Appropriate ministries within the Government of Ontario should support and encourage health care employers to develop necessary supports for employees as part of contingency planning for a health emergency. These should include appropriate education with respect to assessed risk, clear communication of disaster plans, and adequate psychological support services.

Psychological Support

Rec #48 Initial Report

95. The Ministry, in collaboration with professional associations and relevant experts, should develop a plan for the development and use of psycho-educational programs in emergency preparedness training. These programs should address the following:

    a. Preparing staff to deal with the consequences of emergency situations, including anxiety and depression;

    b. Developing coping skills.

    The programs should be developed by summer, 2004.

Rec #49 Initial Report

96. The Ministry, in collaboration with professional associations and healthcare employers, should ensure the availability of psychological support programs for healthcare workers as part of a robust plan for emergency management. These programs should:

    a. support all frontline workers;

    b. allow clear access to Employee Assistance Programs and other resources such as psychiatry;

    c. deal with issues of isolation and stigmatization;

    d. contacts and proactive approaches to manage work fatigue and workload stress.

    Coordinated planning in this area should be initiated by February 2004.

Compensation

Rec #50 Initial Report

97. The Ministry should formalize, as part of its contingency planning for health emergency plans, mechanisms to quickly put into place programs, such as the SARS Compassionate Assistance Compensation Program for Healthcare Workers, to provide compensation for income lost as a result of being unable to work while ill, quarantined, or restricted to one facility as the result of a health emergency.

Process Recommendations

To ensure accountability and to facilitate a coordinated approach to implementing this Report, the Panel offers the following recommendations:

Rec #51 Initial Report

98. The Ministry of Health and Long-Term Care should establish a single coordinating body to oversee implementation of the recommendations contained within this report, within the stipulated timelines.

Rec #52 Initial Report

99. The work of this coordinating body should be guided and supported by a multidisciplinary expert advisory group with representation from healthcare facilities and organizations, healthcare professionals and their associations, and the scientific community.

New

100. The Ministry of Health and Long-Term Care should proceed with implementation of public health renewal according to the multi-year implementation plan outlined in Chapter Four of this Final Report, and with additional funding to support the recommendations as proposed.

New

101. The Ministry should proceed with the development of a transition team reporting to the Chief Medical Officer of Health with responsibility to finalize the operational design and implementation plan for the Ontario Health Protection and Promotion Agency. The transition team should draw upon appropriate external expertise in the design of the Agency and develop a mechanism for appropriate and formal input from healthcare provider organizations.

Rec #53 Initial Report

102. In recognition of those affected by SARS and to ensure accountability to the public with respect to the implementation of these recommendations, the Minister of Health and Long-Term Care should table a progress report in the Legislature no later than December 2004.

New

103. The Ministry should prepare a multi-year plan to address the recommendations from the Panel. Progress on the plan as well as the recommendations should be tabled annually in the Legislature.

Review of Initial Report

Review of Initial Report

The Initial Report constituted the first phase of our work, focusing on the systemic and policy challenges raised by SARS and prioritizing the areas that required short-, medium-, and long-term actions.[1] The content of the Initial Report was informed by over 265 written submissions and almost 150 interviews and 12 focus groups with various levels of healthcare providers, administrators, and other experts from facilities and organizations across the province. These organizations and individuals included nurses, physicians, respiratory therapists, infection control professionals, hospital CEOs, public health physicians and nurses, laboratory staff, long-term care facilities, community agencies, and emergency healthcare providers. We also commissioned a series of independent research reports.

We encourage you to read our Initial Report in its entirety to fully understand the picture we presented and to understand the rationale and discussion behind the recommendations made. However, we are including the following summary of the findings of our Initial Report and have attached a comprehensive and combined list of recommendations of both reports at the end of this Final Report.

The Initial Report covers six key areas – Public Health Models; Infection Control; Emergency Preparedness; Communications; Surveillance; and, Health Human Resources. Specifically, the Panel called for concerted action in 53 separate recommendations for achieving a comprehensive and coordinated public health strategy and a linked *system* for health protection. The recommendations in the Initial Report were extensive and contained aggressive timelines that reflected the sense of urgency felt by Panel members for clear progress.

Public Health Models

In the aftermath of the SARS outbreak, the need for a comprehensive review of public health models in Ontario became clear. We heard that there were numerous challenges: a lack of human resources; inadequate and outdated technology supports; and insufficient capacity or critical mass to respond effectively to major health emergencies.

The Panel felt an urgent need to remedy the structural and organizational problems within the public health system in Ontario, and foster a new era of renewal. As a key focus for this renewal, the Panel supported the establishment of a Health Protection and Promotion Agency in Ontario, which would report annually to the Legislature and have responsibility for the Ontario Central Public Health Laboratory, and a new Division of Infection Control. In addition, we believed that there needed to be urgent legislative amendment to provide clear authorization for the Chief Medical Officer of Health (CMOH) to report directly to the Legislature. We suggested that further research was required to find the precise balance between independence and effectiveness for the Chief Medical Officer of Health and the Agency.

While we felt that the creation of this Agency would be central to making profound changes in the system, we also recognized that it would not be effective without significant changes and investments at the local level. The Panel heard that there are numerous pressing challenges faced by Public Health Units at the local level. Public health experts have long advocated for a full evaluation and ultimately rational consolidation of the structure, governance, and diffuse nature of the province's existing 37 public health units.

The findings of the Initial Report, along with our subsequent research, have led us to propose that a comprehensive review be undertaken using an evidence-based assessment to fully examine the staffing, governance, and skill mix required to better deliver public health at the unit level. The results of this comprehensive review should be used to inform any consolidation of the existing 37 Public Health Units into larger and better resourced Units. Hence, in our Final Report, we present a staged implementation plan and additional recommendations on approaches that ensure a strengthening, not weakening, of our existing system.

Early on, the Panel was made aware of the issues surrounding the municipal role in funding of public health in Ontario. Therefore, our Initial Report called for the restructuring of the present municipal-provincial cost-sharing agreement so that the province funds 75% to 100% of public health resources within two to five years. In the short-term, full provincial funding of the 180 staff positions committed to Public Health Units as part of the Ontario SARS Short Term Action Plan must continue beyond March 31, 2004.

Highlighting the challenges, and at times lack of cooperation and trust between some Public Health Units and acute care facilities, the Panel made clear recommendations on the need for a review of the *Mandatory Health Programs and Services Guidelines*.[2] The aim of the review is to determine, in conjunction with the acute care sector, a more precise definition of roles and expectations for public health in the field of acute care. The Panel also proposed that compliance and enforcement mechanisms be strengthened and better resourced for the *Mandatory Health Programs and Services Guidelines*.

Infection Control

In the Initial Report, we identified key shortfalls in areas such as infection control standards, human resources, facility design, and infection control training. The Panel also heard that there is a need for more formal coordination of regional infection control expertise and we recommended the establishment of Regional Infection Control Networks, with membership drawn from hospitals, long-term care facilities, Public Health Units, and other healthcare providers.

It also became very clear to us that there is an acute shortage of infection control practitioners and physicians. This is partly due to a lack of educational programs to properly train and certify infection control practitioners, as well as other specialists in infection control. Students in healthcare programs may also not be consistently receiving core training in infection control. Moreover, there is a clear need for tailored infection control training for all workers across every sector of the healthcare system. The Panel recommended a series of measures to build infection control knowledge and skills among all healthcare workers. This could include 'train-the-trainer' initiatives in order to:

- facilitate accessible infection control training for all healthcare workers;
- expand programs to train infection control practitioners as part of their eligibility for certification;
- establish standards for infection control education; and,
- include infection control as a core curricular element for health-related educational programs at colleges and universities.

The Panel further recommended establishing targeted funding for infection control programs in Ontario.

Infection Control Standards

The Initial Report highlighted the absence of and need for clearly articulated and enforceable standards in infection control that are applicable across Ontario and across all portions of the healthcare system. The Initial Report stated further that these standards could stipulate such requirements as the following:

- Each healthcare facility must have an organized program of infection control.
- Infection control programs should include sanitation practices, surveillance and outbreak management protocols, infection control policies, procedures, and educational support.
- Each facility must designate a minimum number of infection control practitioners who have clear responsibility for surveillance and outbreak management – recognizing that current staffing shortages means that this will take time and require support.
- Each facility must have an outbreak contingency plan.
- Each facility must comply with the specifications for the design and construction of healthcare facilities.
- Each region must have a specified number of negative pressure rooms.
- Each facility must implement the standards for core competency and education in infection control.

In addition, we recommended that such standards be accompanied by a mechanism to measure or ensure compliance.

Emergency Preparedness

Articulating the need for greater capacity and dedicated resources for emergency preparedness and contingency planning, and greater attention to health sector cross-jurisdictional protocols, the Initial Report dedicated a full chapter and nine separate recommendations to approaches that need to be undertaken to strengthen our central capacity to respond to and manage emergencies.

As an immediate measure, we recommended that Ontario's current state of health emergency preparedness in the following areas be reviewed and assessed: patient transfer; rapid hospital discharge; the CritiCall program; and, the capacity to obtain and distribute supplies.

To facilitate an effective response to any future health emergency, our Initial Report also recommended:

- a review of the *Emergency Management Act*[3];
- a dedicated office for Emergency Preparedness at the Ministry;
- harmonization between federal and provincial emergency supplies and distribution networks; and,
- emergency plans to be tested and evaluated in the future.

Communications

During the SARS outbreak, both the public and healthcare providers needed credible, clear, and timely information. However, providing this information was hampered by the fact that SARS was a disease about which little was known. That said, it became apparent to the Panel that this difficult situation was made even harder for those involved due to the following challenges:

- There was an absence of direct lines of contact to healthcare providers at the onset of the outbreak.
- There was a need to respond to diverse healthcare groups in a clear manner according to their respective needs.
- Sometimes there were overlapping responsibilities both within the province and between the provincial and federal governments.

There were also significant deficiencies in technical aspects of the province's communications infrastructure, notably the inability to reach many community-based healthcare providers and to allow for rapid two-way communications.

The Panel believed that a technologically advanced infrastructure would help to ensure effective two-way communication during a health emergency. Furthermore, we recommended that the Ministry develop an awareness plan to educate the public concerning public health and infection control. The Panel also recognized the importance of more formal links and strengthened contingency planning with Health Canada to ensure consistent messages, clearly designated points of contact during a crisis, and alignment of roles and responsibilities.

Surveillance

In the Initial Report, the Panel learned that efforts to contain SARS were impeded by a lack of a comprehensive infectious disease surveillance plan. This was further complicated by the lack of suitable information technology infrastructure to support such a plan. We dedicated a full chapter in our Initial Report to the needs that exist in the area of disease surveillance and reporting. We called for a series of measures to expedite the implementation of appropriate information technology supports (iPHIS) to Public Health Units to better assist them in detecting and responding to emergent health threats such as infectious disease outbreaks. Our Final Report provides more detail on how a new Health Protection and Promotion Agency could provide increased leadership and enhanced capacity for disease surveillance and timely distribution of relevant findings to Ontario's healthcare providers.

Health Human Resources

The Panel heard about the general shortages of healthcare professionals, particularly those critical to combating infectious disease outbreaks such as critical care and emergency nurses, infectious disease physicians, microbiologists, epidemiologists, public health physicians and nurses, infection control practitioners, occupational health and safety staff, and respiratory therapists. Similarly, the availability of full-time employment for many healthcare workers was clearly inadequate, and the Panel believed that existing rates of casual, part-time, and agency employment were undermining efforts to ensure a stable and cohesive work place. The Panel learned that the profile of occupational health and safety in healthcare workplaces is far too low, and that the role of occupational health and safety during an infectious disease outbreak is unclear. The proper use, efficacy, and availability of personal protective equipment became a prominent issue across most healthcare sectors. Finally, the immense personal stress experienced during SARS demanded a review of the mechanisms to provide accessible, confidential, and broadly available psychological and social support to both workers and their families.

The Panel supported ongoing efforts to increase enrollment in key health professions. As well, we recommended increasing the percentage of full-time healthcare worker positions to at least 70%. In the interim, we recommended that further methods should be developed to efficiently use existing healthcare workers during an emergency. As an immediate step, we recommended hiring additional medical microbiologists for the Ontario Public Health Laboratory.

The Panel also believed that current practices in occupational health and safety needed to be reviewed, and recommended developing and broadly disseminating best practices, particularly with respect to the interface between occupational health and infection control. This included developing and disseminating evidence-based best practices concerning the use of personal protective equipment. Finally, as part of contingency planning for health emergencies, we recommended programs to compensate healthcare workers for lost income and to ensure the rapid provision of psycho-educational and psychological support.

Public Health Human Resource Revitalization Strategy

In the Initial Report, the Panel highlighted the urgent need for a comprehensive public health human resource revitalization strategy. It was one of the most striking and urgent issues that we heard about. Therefore, our recommendations listed in detail the critical revitalization strategies including improved training and educational opportunities, increased enrollment in relevant undergraduate and post-graduate training positions/residencies, the promotion of cross-training, the need to promote public health careers in conjunction with Human Resources and Skill Development Canada, and a review of current recruitment and retention strategies for Medical Officers of Health and their staff.

Infection Control Training
The Initial Report identified the severe shortage of formal training programs in infection control in Ontario. Further, infection control training at the facility and organizational level is not universally available or accessible. Compounding this problem is the shortage of experienced infection control professionals. Therefore, as part of the initial set of recommendations on training needs in infection control, the Panel proposed a series of measures to improve the availability of infection control training using 'train-the-trainer' and in-service models.

Initial Report - Process Recommendations

The Panel also recognized that there was a need for our work to be consistent and to integrate with the work of Dr. David Naylor and the National Advisory Committee on SARS and Public Health.[4] In addition, we identified that a single, effective mechanism was needed to coordinate and facilitate implementation of the recommendations was. The Panel recommended that a single body be established to oversee the implementation process, with its work aided by a multi-disciplinary expert advisory group. The Panel also urged the Minister to table a progress report regarding the implementation of the recommendations no later than December 2004.

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Introduction to Final Report

Introduction to Final Report

In this Final Report, the Panel presents a series of core steps that we consider foundational to the overall public health renewal process. The steps include an approach to the development of an Ontario Health Protection and Promotion Agency and strengthened infrastructure at the provincial level, as well as a series of phased practical steps required at the local and regional levels. These latter steps are required to enhance local capacity and preparedness to strengthen the protection of patients, healthcare providers, and the public on a day-to-day basis as well as to respond to inevitable, high profile emergencies.

We wish to highlight our firm conviction and belief that the need for change centres on a renewal of the public health system, not just the creation of structures or new agencies. Ultimately, the core faith of Ontarians, and indeed Canadians, in government rests on performing certain essential functions well. Historically, one of these essential functions has always been the protection of the population from disease. Therefore, basic public health and core infection control need to be thought of in this light as functions that reflect part of the social contract between the public and its government, and not simply as another fiscal pressure on a burdened health system. Even in an era of fiscal restraint, we must remind ourselves and others of the cost of ignoring the essentials.

In essence, the Panel envisions the creation of a new Ontario Health Protection and Promotion Agency as only one element of a much larger renewal effort that must be supported by broader changes at the local, regional, provincial, and national levels in order to achieve the required public health system for Ontarians.

In addition to being a key focus of our Initial Report, this conviction has also been reflected in the work of Dr. Naylor and the National Advisory Committee on SARS and Public Health,[1] the work of Senator Kirby and the Senate Committee,[2] and in the earlier work of the Walkerton Inquiry[3] (in terms of local capacity). All of these reports emphasize the importance of addressing the weaknesses in the foundations of the public health system and infection control capacity, and not simply redirecting existing resources and functions into a new central structure. In our view, if the provincial and/or federal governments only create new public health agencies and simply redirect existing resources into these agencies, we will have built some of the structure, but not the foundations. And, sadly, we will not have learned the appropriate lessons from SARS.

A key opportunity for comprehensive public health renewal remains, as it has always been, at the local level where resources will have the greatest impact and where the day-to-day strengths and weaknesses of our system are felt in communities. While more mundane and less glamorous than the creation of a new agency, the task of revitalization at the local level is essential in improving the core services directly provided to Ontarians in their communities and in their facilities.

For this reason, the Panel believes that discussions concerning public health renewal in Ontario should flow from recognizing the need to strengthen basic functions such as infection control, surge capacity, and essential public health functions in the overall system, and not merely from the desire to create an agency *per se*. What Ontario requires now is a sustained, consistent, and ongoing focus on strengthening the essential functions of public health and infection control. This will be true both on the ground and at the agency level.

The Panel believes it is important to provide a degree of context to the changes proposed. It is necessary to first grasp the breadth of activities required for an effective public health system before we can approach an understanding of the changes required and the place of an agency in the bigger picture.

A public health system entails a clear vision for health protection and promotion along with articulated goals and objectives as well as the appropriate system infrastructures (human and financial resources, organizational structures) and strategies. There has been considerable work undertaken around the world to try to articulate what the parameters, and thus functions of a public health system, should entail. In the U.S., the Essential Public Health Services (EPHS) concept was developed by a working group of leading public health agencies in the mid-nineties.[4] In 1995, following pilot testing in various states, the EPHS was formally adopted. Building on this work, the Pan American Health Organization (PAHO), the Regional Office for the Americas of the World Health Organization, adapted the EPHS and developed the Essential Public Health Functions (EPHF).[5] Table 1 provides a summary of these services and functions.

Table 1: Overview of Essential Public Health Services and Essential Public Health Functions

Essential Public Health Services (U.S.)	Essential Public Health Functions (PAHO)
• Monitor health status to identify community health problems	• Monitor, evaluate and analyze health status
• Diagnose and investigate health problems and health hazards in the community	• Public health surveillance, research and control of risks and threats to public health
• Inform, educate, and empower people about health issues	• Health promotion
• Mobilize community partnerships to identify and solve health problems	• Social participation in health
• Develop policies and plans that support individual and community health efforts	• Develop policies and institutional capacity for planning and managing public health
• Enforce laws and regulations that protect health and ensure safety	• Strengthen institutional capacity for regulation and enforcement in public health
• Link people to needed personal health services and assure the provision of healthcare when otherwise unavailable	• Evaluate and promote equitable access to necessary health services
• Assure a competent public and personal healthcare workforce	• Develop and train human resources in public health

Although quite similar, EPHF as articulated by PAHO more clearly delineate a disaster/emergency function for public health. Full details of what these functions and services entail is included in Appendix 2.

EPHF/EPHS encompass a vision of the key components of an effective public health system, recognizing the need for multiple actions and interventions to be undertaken by different parties (government, non-government, academia, research, etc.) and at various levels (local, provincial, federal). There has been some work done in Canada to try to articulate essential public health services. A recent position paper by the Association of Local Public Health Agencies (alPHa) highlights the need for Ontario Public Health Units to undertake core public health activities that are consistent with EPHS.[6]

From a process perspective, EPHF/EPHS can also serve as a benchmark against which progress towards a public health system that supports specific health goals can be measured. To this end, the US Centers for Disease Control and Prevention (CDC) has taken these functions a step further and uses them as the foundation for public health performance and standard setting (see textbox).

In both the Initial and Final Reports, the Panel makes specific recommendations in many of the EPHF/EPHS areas to support public health renewal. These focus on the creation of specific structures and networks to support public health action, affording greater independence by the Chief Medical Officer of Health to speak independently, undertaking a capacity assessment of local Public Health Unit staffing levels and mix to work towards greater breadth and maximization of resources, as well as further promoting collaboration among public health and other sectors.

> As part of its Public Health Performance and Standards Program,[7] the CDC has developed specific tools based on EPHF for state and local authorities, as well as for public health governing bodies to determine current performance and capacity; identify areas for system improvement; strengthen partnerships; and ensure that a strong public health system is in place to respond effectively to day-to-day public health issues and public health emergencies.

Intergovernmental Collaboration

The Panel is acutely aware that an effective agency and a strengthened system can only be achieved through partnerships and collaboration. This collaboration will entail partnerships within the health system and across sectors, as well as among government departments within the province, with other provinces and, critically, with the efforts of the federal government. For this reason, in our Initial Report the Panel both endorsed and called for a comprehensive response from the federal government to the recommendations set out in the Naylor Report. From the 2004 Federal Budget, it is now clear that some important first steps have been taken to pave this path of renewal.[8] The Panel notes that while these initial steps are positive, they are clearly limited and need to go further and be both sustained and supplemented.

We trust, though, that with partnership and commitment at the provincial level, and a comprehensive approach at the federal level, real progress can be made. Presently in Canada, there is a rare opportunity to converge federal and provincial interests. If it is actively pursued, this convergence will result in real and lasting change. This opportunity must be seized and not lost.

There are clear synergies and opportunities for collaboration between the proposed federal approach to strengthening Canada's public health system and the proposed course for Ontario. These synergies centre on a number of areas including:

a. Establishment of a Public Health Agency

The proposed Canadian Public Health Agency will serve as the focal point within the federal government on public health matters. At the present time, discussion on the Canadian Public Health Agency has focused on the management of infectious diseases, emergency preparedness and response, as well as the prevention of chronic diseases. The national agency will also contribute to the development of a pan-Canadian public health network. Furthermore, of key importance to the Panel is the recent announcement in the 2004 Federal Budget of additional funding to develop and implement improved data collection standards and the development and implementation of a national surveillance system.[9] The proposed Canadian Agency and processes to support public health across the country will support and contribute to public health renewal in Ontario.

The vision for the proposed Ontario Health Protection and Promotion Agency echoes well with the developing vision of the Canadian Public Health Agency and potentially could translate it into the day-to-day life of the provincial domain. The degree to which potential operational alignments can be built in at the agency design level by both levels of government early on in the process will be important, and a far easier task than attempting to undertake modifications and role clarifications after the fact. The Panel envisions that once the agencies are operational, there will be considerable technical and scientific liaison between both. Furthermore, the collaboration and relationship with the Canadian Agency will support the proposed Ontario Health Protection and Promotion Agency in effectively carrying out its mandate.

Given Ontario's strategic location and position as well as its core critical mass of academic, scientific, research, and clinical expertise, the Panel feels that in addition to coordination and collaboration, there are benefits to exploring the co-location of the proposed Canadian Public Health Agency in Ontario. That said, regardless of the location of the hub, Ontario's efforts must supplement and link whatever the outcome of national discussions.

b. Emergency Response and Health Human Resources

Both levels of government are undertaking a number of activities to enhance emergency response capacity, including the support for Emergency Preparedness Units/Offices, as well as Emergency Response Teams and equipment. Ontario is collaborating with the federal government in many of these endeavours. However, there are also important opportunities to collaborate in the recently announced expansion of the Canadian Field Epidemiology Program. The gaps in human resource training in Ontario are very clear. Coordination with the federal government in this Program could be an enhanced contribution to Ontario's work in health human resources training and any effective models developed within provinces should have the potential and the mechanisms to be shared beyond the boundaries of any single jurisdiction.

c. **Centres of Excellence**
There have also been announcements regarding the establishment of regional centres of excellence in public health and laboratory facilities to advance understanding and action in key areas such as communicable disease epidemiology. This announcement presents a key opportunity for collaboration, particularly given the Panel's recommendations with respect to the mandate of the Ontario Health Protection and Promotion Agency and the proposed Provincial Communicable Disease Committee along with the Regional Communicable Disease and Infection Control Networks.

d. **Expanding Laboratory Capacity**
In its Initial Report as well as this Final Report, the Panel has identified the clear need for an enhanced Central Public Health Laboratory capacity within Ontario, as well as the need for enhanced coordination with other components of the public health system. To this end, the need for continued and enhanced coordination with the National Microbiology Laboratory and the rapid development of an enhanced national public health laboratory network remain of key importance. The recent announcement of increased funding to support laboratory-based research will no doubt provide opportunities to support proposed research and laboratory functions needed in the province.

Aboriginal Public Health

No communities in Canada have experienced and continue to experience poorer health status than the Aboriginal communities. The Panel is aware of the litany of statistics that attest to the negative impact that a range of health determinants continue to play in the Aboriginal communities on- and off-reserve across Ontario.

Often overlooked in the rush to document the health status inequities, there are successes including numerous creative and effective programs in some areas that have achieved real progress. It is also clear from experience that the direct involvement of the Aboriginal communities in the design, development, and delivery of the required solutions is a pre-requisite for their success.

Public health services and responsibilities within First Nations communities reside in a particularly complex and tangled jurisdictional field that currently structures the way in which healthcare is funded, regulated, and delivered in these communities.

In the area of public health and infection control, there is a critical need for a tri-partite plan. This is particularly true in the need to develop contingency plans for infectious disease outbreaks in First Nations communities.

The Panel proposes that mechanisms to support continued collaboration with the federal government be further refined and focused (i.e., F/P/T committees), with the recognition of specific areas and issues of mutual interest. Such endeavours should not only centre on technical liaison and exchanges, but also on specific collaboration activities to advance respective public health priorities. The timing for collaboration is not only ideal, but if anything, overdue.

The Panel also proposes that Ontario, the federal government, and First Nations leaders initiate discussions on a formal protocol pertaining to govern public health emergencies at the First Nations level, with a view to completing a protocol within twelve months.

Conclusion

We remain committed to the observations and recommendations put forward in our Initial Report, and see this Final Report as a further step towards public health renewal in Ontario. In both Reports, we have discussed and made recommendations regarding the rest of the healthcare system in Ontario, and we urge an equal consideration of these issues.

The time for change in Ontario is now: a new provincial government with a fresh mandate and a stated commitment to public health; a federal government that has already indicated some willingness to move forward in public health; and a healthcare system that is crying out for change. Within six months of each other, three reports at both the national and provincial levels have all put forward a consistent vision for a revitalized public health system that cannot be ignored. We have already lived through a fall and winter, hoping that SARS would not return. With the new year came more news of avian influenza outbreaks across Asia and fears of the possibilities of human transmission should the virus mutate. The question we pose is whether we are any more ready now to tackle an unknown public health enemy than we were one year ago? The honest answer is yes. We acknowledge the progress that has been made at both the federal and provincial levels, but we must rephrase the question, are our systems as ready as they need to be for the future?

As we noted in our Initial Report, improving our collective capacity to deal with emergencies such as SARS is a collective debt we owe to those who died from the disease, to those who lost loved ones, and to the healthcare providers who valiantly dealt with the disease. It is a debt that we owe to those who have shared their stories with us, and to those who continue to suffer from the experience. Improving our capacity to handle health emergencies is a down payment on the future – it is an investment for those who fight the next major health emergency or crisis, so that they may have access to the tools, supports, and process that we lacked during the SARS outbreak.

We hope that the thoughts, considerations, and recommendations that we have put forward both in our Initial and Final Reports are taken seriously. These must be truly considered as a foundation for substantial change, which is crucial to the effectiveness of our healthcare system in a rapidly changing global environment. We hope that this change moves ahead in partnership and collaboration, and in the spirit of those who fought so hard and offered so much to protect the health of everyone in Ontario. Now is the time for words to begin to be deeds.

Recommendations

10. The federal government, First Nations leaders, and the Ontario Ministry of Health and Long-Term Care should initiate discussion on a formal protocol relating to public health emergencies at the First Nations level with a view to completing a protocol within one year.

11. Ontario should vigorously pursue opportunities for co-location and collaboration between the proposed Canadian Public Health Agency and the Ontario Health Protection and Promotion Agency.

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Chapter One:
Agency Design—Renewal and Change

Overview

The overall rationale for the development of an agency to reinforce central public health capacity to deliver objective scientific advice is strong. We see this project as a vehicle to create a stronger central laboratory, and to ensure that enhanced scientific and medical leadership is linked into a single coherent framework.

The Panel urges the Province of Ontario to proceed with the development and phased implementation of an Ontario Health Protection and Promotion Agency. The proposed Agency should be equipped with appropriate legislated authority, an expert board, and appropriate mechanisms to promote accountability and transparency. We also propose that strong organizational and operational linkages with the Canadian Public Health Agency be established in the overall design.

The mandate of the Agency should be:

- to promote and protect the health of the people of Ontario, by generating timely and accurate scientific, laboratory, and epidemiological services and providing expert advice and support on measures to improve the health of Ontarians; and
- to translate evidence and research into practical and effective assistance, tools, advice, and support to healthcare providers in Ontario.

It is proposed that strategic direction for the Agency be set by the Chief Medical Officer of Health (CMOH) and day-to-day operational and scientific leadership be provided by a Chief Executive Officer. The role of the Chief Medical Officer of Health should be supported by appropriate amendments in the Ontario *Health Protection and Promotion Act*[1] to enable the CMOH to speak and issue research and reports independently of the Minister of Health and Long-Term Care and, where matters warrant, report directly to the Legislature.

It is also essential for an agency model to have effective linkages if the evidence and analysis generated by the Agency is intended to influence and assist in shaping policy at the provincial level. It is envisaged that a reinforced Central Public Health Laboratory capacity would over time be co-located with the surveillance and epidemiology functions of the proposed Agency. The Agency is also envisaged as creating and linking to a broader network of scientific and laboratory expertise both within Ontario and nationally. It is proposed that the Agency be phased in over five years, beginning operations in the third year. A series of interim steps are also proposed to immediately strengthen response capacity and ensure that core functions are strengthened as we build the Agency – not simply relocated into a different structure.

Primary Anticipated Costs

- Annualized operating costs for the Agency estimated at $45m annually by Year 5 – with estimated developmental costs of approximately $5m annually over a three year period.

- These costs are proposed as supplementary to existing expenditures but do not however reflect potential additional federal funding that could potentially offset some of the costs to Ontario or enhance areas of activity.

- Anticipated one time capital costs of approximately $35m for the construction of the Agency with core Central Public Health Laboratory capacity.

A Health Protection Agency for Ontario

1. Why Do We Need a Public Health Agency in Ontario?

A. To organize and align linked scientific and technical functions (including support to the healthcare community) in a focused manner, distinct from corporate ministerial functions.

B. To have a dedicated group that is specifically designed both structurally and administratively to be flexible and agile, to prepare for the future in public health, and to handle critical analytical and response functions.

C. To allow for greater autonomy, independence and visibility in the provision of central scientific support functions for public health.

A. Alignment of Scientific and Technical Functions

The Panel supports delineating the core functions of providing scientific and technical health advice and support to healthcare decision makers, healthcare providers, the public, and local public health officials from the broader macro-level policy development, governance, and enforcement roles of the Ministry. The Agency will be able to create a base of shared expertise that is equipped to work effectively with different sectors of healthcare.

This delineation has the potential to introduce greater clarity among the regulatory, enforcement, policy, and support functions of the Ministry and those associated with generating, assembling, and disseminating scientific evidence for use by public health officials and, ultimately, the broader health system.

Creating the Agency is essentially an act of vesting the responsibility to offer evidence-based, credible, independent, and practical advice to the Ministry and healthcare providers at a distance from the more corporate functions of the Ministry.

This functional separation already exists to greater or lesser degrees in both Quebec and British Columbia, as well as at the US CDC, whose mandate is functionally linked to but distinct from the mandate of the US Department of Health. While there are obvious operational differences in the models, they are similar in that the evidence generated and the resulting advice, standards, and tools based on this evidence are not co-located with the more corporate policy and ministerial support functions of a ministry of health.

The case has been made to the Panel that the question of how the province performs certain tasks and the degree to which these efforts are organized, coordinated, and resourced is more important than the body in which they are finally housed. There is some truth to this; however, we remain convinced that developing an agency would likely bring additional value, visibility, and cohesion to certain activities that have been typically under-resourced and under-examined at the Ministry level prior to SARS. For example, our epidemiology, infection control, and central laboratory capacity have clearly not been core priorities at the Ministry over the past decade despite observations by provincial auditors, former Medical Officers of Health, and others.[2] It is hoped that an agency will change this by improving both alignment as well as visibility and profile for these vital but too often invisible services.

The Panel also urges that the *process* used to construct the Agency be undertaken as an exercise in examining and improving *how* we perform

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these activities. Put simply, the move to an agency structure should not just be doing the same thing in a different organizational body; rather it provides a unique opportunity to promote a change in culture and orientation at the centre of the system.

This is also true for: the functioning and partnerships of our central laboratory; how we create and disseminate epidemiological data; our use of information technology in planning and approaches to disease surveillance; and our approaches to communicating with healthcare providers. In all of these areas, the Panel has identified in both this Report and the Initial Report, clear opportunities to proceed more effectively; these are detailed later in this Report.

B. Greater Flexibility and Agility

The Panel is acutely aware of the challenges inherent in large multi-tiered organizations responding rapidly to emergent issues. The challenge at the Ministry is not unique and can be seen as a hallmark of many large bureaucratic organizations. Indeed, the challenge of responding rapidly to emergent issues is one of the principal reasons that so many jurisdictions internationally have pursued dedicated public health or communicable disease agencies with a degree of functional latitude from the bureaucracy.

Public health, as Dr. David Naylor and the National Advisory Committee on SARS and Public Health correctly noted, is one of the few services provided directly by the Ministry to the public and to the field.[3] As such, several of public health's diverse scientific and technical functions are not obvious or easy fits within the overall framework. Making the case for the national agency, the Naylor Report observed the following:

"...*the current placement of public health functions within a department of government puts public health professionals inside a very large organization and a highly process-oriented culture with a particular orientation to the political issues of the day....the processes by which policy is developed and communicated may be suboptimal for the provision of specialized public health services.*"[4]

The case made at the federal level clearly applies at the provincial level. It is also the case that unlike other services provided by the province directly to the public (such as issuing OHIP cards or processing drug claims), providing central public health and public health laboratory services is uniquely challenging, as evidenced over the past few years. Specifically, while public health services include certain routine functions, they must also be acutely sensitive and ready to respond to unpredictable and evolving threats to the public's health on a day-by-day basis. This places an even greater premium on a responsive, fast-moving organization.

For any new body or structure to be effective in this context, it will require flexibility and dexterity. This has some obvious operational implications; as an example, the Panel heard clearly that part of the problem experienced during the SARS outbreak resulted from inadequate surge capacity in the system as a whole, including at the central level and particularly in the area of epidemiological analysis and senior laboratory expertise. An under-resourced agency, or one too hampered by multi-tiered approval processes and highly restricted authority, will not reap the potential of the model.

The creation of rapid response teams, announced during the latter stages of SARS, provides a limited example of the type of surge capacity that could be housed at and or linked to an agency. Yet this only captures the reactive side of flexibility; that is, responding to a crisis after the fact. The same goal of agility should permeate the anticipatory and early warning capacity that needs to be strengthened at both the provincial and local levels. This will require, as outlined in the Initial Report, enhanced and linked information technology supports at the agency and lab level, in addition to the necessary enhancements identified at the field level. Thus, the recommendations in the Initial Report, which are focused on technological and resource enhancements required both centrally and locally, are in many ways conditions of the Agency's success. They are not alternatives. A strong central body will never compensate for weak local capacity in infection control in the local public health system.

The Panel heard almost unanimously from public health experts and representatives from other jurisdictions that if carefully implemented, an agency structure functioning distinctly from the Ministry could offer a greater degree of agility to several of the critical analytical and response functions currently housed at the Ministry. This observation is not unique to Ontario. In the European Community's resolutions outlining the rationale for creating the new European Centre for Disease Control, the resolutions explicitly cite agility and ability to react rapidly as core reasons to develop a focused and centrally dedicated European Centre for Disease Control.[5]

C. Autonomy & Independence

Essentially, an agency should be able to act responsively, solely in the interests of public health. This includes its proposed activities in the areas of knowledge transfer, epidemiological analysis and surveillance, and communications. In order to maximize credibility and clarity in carrying out its roles and responsibilities, an agency should receive its authority from a legislated source that allows it to function with a well-defined scope of latitude.

The Panel recognizes that there will be more corporate aspects such as insurance, human resource support services, procurement, etc., that will be more cost-effectively achieved through centralized resources, and that this should be explored. The focus should be on assisting the Agency in its development, and not on assembling another mini-ministry.

An agency must also have the latitude to be able to forge appropriate relationships and partnerships with academic institutions, healthcare providers, and relevant federal and provincial bodies. The Agency should also be assured both through its founding legislation and appropriate Memoranda of Understanding that it has the ability to produce and issue reports, and that its research and advice will be released publicly either directly by the Agency, or through the CMOH. This will be discussed later in the chapter.

2. What Benefits Might an Agency Offer?

Each agency model examined by the Panel has a unique history; regardless, it is clear that there are certain core hallmarks visible in the successful agency models that have evolved.

- ***Relevance*** – the agencies that have gained credibility and respect have been able to weave themselves into their respective societies. They have also often managed to achieve the challenging task of turning scientific information into practical knowledge and tools that directly assist in addressing health risks at the local and regional level. While this seems like an obvious observation, we need to maintain a vision of an agency that provides useful support and assistance at the point of care.

- ***Alignment*** – in B.C., Quebec, and a number of other jurisdictions that the Panel examined, the co-location of related scientific and analytical skill sets, particularly in the fields of epidemiology, surveillance, and laboratory and microbiology expertise, has achieved a greater critical mass and focus than the sum of the parts.

- ***Coordinated access to research and expertise***– at their best, effective public health agencies have developed successful partnerships with external academic and scientific research institutions and organizations. These linkages appear to provide value both to the agency staff and the field; they also assist in keeping abreast of rapidly changing science and broaden access to information and support for the ministries with which they are aligned.

Building an Agency in Ontario

The Panel has benefited greatly from the generous advice provided by experts in Ontario and representatives from agencies in British Columbia, Quebec, the U.K., and U.S. Our task now is to translate these lessons into a recommended agency model for Ontario that can be relevant, responsive, and provide added value to healthcare providers, Public Health Units, and ultimately, the people of Ontario.

The following table provides a brief snapshot of some of the common areas of focus of a number of established agencies. While this snapshot is not exhaustive (each agency listed has a range of additional activities), it shows some of the core functions these established agencies lead, support, and/or coordinate.

Table 2: Common Areas of Focus of Selected Public Health Agencies

	BCCDC	Quebec Institute	UK (HPA)	US CDC	Minnesota	Oklahoma	Florida
Communicable disease prevention & control	x	x*	x	x	x	x	x
Public Health Laboratory	x	x	x	x	x	x	x
Chronic disease prevention & control		x		x	x	x	x
Injury prevention & control		x		x	x	x	
Emergency preparedness#	x		x	x	x	x	x
Environmental health	x	x		x	x	x	x
Food protection	x			x	x	x	x
Chemicals			x	P	x		
Poison control	x	x	x	P			
Research	x	x	x	x			
Risk communications	x	x	x	x	x	x	x

Legend
x: Levels of involvement vary
P: partially, led with other agency
#: Typically a support function and a component of an overall framework.

*Note: Quebec agency provides expert advice. CMOH with legislated authority remains within provincial government department.

In all cases, the principal function centrally is coordination, advice, standard setting, and information dissemination – with actual delivery usually being undertaken by multiple partners at the state/region/local level.

BCCDC: British Columbia Centre for Disease Control. CDC: Centers for Disease Control and Prevention (US). HPA: Health Protection Agency (UK).

The Panel has heard from healthcare providers that while support for the development of an agency in Ontario is strong, there are also caveats. For example, the Panel has heard that any new entity that simply ends up issuing academic reports and remains largely aloof from the day-to-day requirements of healthcare providers and public health leaders is not what the system requires, nor what public money should be spent on. The Panel wholeheartedly shares this perspective – above all, any new agency for Ontario must provide value and assistance to the local level. As the CDC has rightly observed *"the best, most up-to-date health information is meaningless unless it is meaningful and accessible to the people it is meant to serve."*[6]

Therefore, any new, effective organizational model for Ontario must be grounded in a realistic understanding of the Ontario social and health delivery system. An agency will only be effective and relevant if it is consciously attuned to the needs of providers, Public Health Units, and public health leadership in Ontario – no matter how flawless the design of the central structure.

The goal in Ontario should be to concentrate on those areas that would benefit from a focused and responsive agency structure. We should also consciously avoid creating a structure that rapidly or naively assumes responsibility for all things in health promotion or health protection – clearly an impossible task. Rather, at the early stages, the Agency should focus on a small number of core functions and do these extremely well.

In summary, we believe that an agency that is under-resourced and under-staffed will make only a marginal difference. Equally, we believe that there is opportunity for an agency to make real progress if we can:

- address, in a targeted manner, a number of the critical weakness areas at the central level identified in the Initial Report;
- create and enforce the authority, structure, and processes that allow an agency to be agile, transparent, and flexible; and
- provide appropriate funding.

Role of the CDC: Relevance and Realism

In Canada, little discourse regarding potential agency models for public health/disease control occurs without comparison to the US Centers for Disease Control and Prevention. In fact, many people in the healthcare community have repeatedly suggested the label 'CDC North' as shorthand for the model of structural change required both in Ontario and federally.

While there are obviously valuable lessons to be learned from examining the experience, evolution, and effectiveness of the CDC, there are also risks in the comparison. For example, there are key critical differences in the management, funding, structure, and organization of healthcare and public health in the U.S. that would make importing the CDC model extremely difficult. Clearly, one should not assume that a CDC-sized template is either rational or achievable.

Firstly, the CDC is an internationally renowned agency functioning at the national level with a budget in excess of US$7.1 billion (approximately CDN $9 billion), or about one-third of the entire healthcare budget for Ontario.

Secondly, the credibility of the CDC and the degree of functional (if not formal) independence and respect that the agency has gained is the product of nearly sixty years of history, aided by a series of major investments over decades in scientific technical expertise, and the research and technology supports available to the agency. The CDC is far from unique in this regard, as many of the larger successful public health agencies worldwide have developed in an evolutionary manner, gradually adapting to different functions over time as new needs emerge. In Ontario, we cannot wait 60 years to create an effective agency, but we should not fool ourselves into believing that it can happen overnight.

Furthermore, the balance between support and capacity in public health at local and state levels *vis-à-vis* the CDC's central capacity differs markedly in many US states. This is due to different funding approaches taken by some states and localities, which are highly reliant on the central structure. The term 'inverted pyramid' has been used by some to explain the dilemma sometimes experienced at the local and state level.

In this regard, the Panel has been cautioned by some experts to take care when designing the Agency that the desire for a strong and effective core set of central services does not come at the expense of weakened local capacity.

Centers for Disease Control and Prevention

The US CDC evolved from a relatively narrowly focused communicable diseases centre established in the aftermath of World War II to a highly complex and broad-based public health agency. In 1946, a small Communicable Disease Center was set up in the old Office of Malaria Control in War Areas, housed in downtown Atlanta, with a mandate to work with local health officials in the fight against malaria and typhus and other common diseases. A year later, a token payment of $10 bought the land on Clifton road in Atlanta where the agency now sits.[7] Through a sequential process, the CDC has broadened its mandate by gradually incorporating national institutes and establishing national centres to include a number of areas such as violence, occupational health and safety, health promotion, and chronic disease prevention. It has also had a long history of scientific advances and an increased international presence.

1. Mandate of the Agency

The Agency should have two key roles:

- to promote and protect the health of the people of Ontario, by generating timely and accurate scientific, laboratory, and epidemiological services and providing expert advice and support on measures to improve the health of Ontarians; and

- to translate evidence and research into practical and effective assistance, tools, advice, and support to healthcare providers in Ontario.

2. Key Success Factors for the Agency

Based on the input of experts, the Panel has identified a set of key success factors that represent an outline of the 'desired state' for a new agency and a new approach.

A. Transparency

Building on the need for change, the Panel believes that it is important that any new Ontario agency be created in an open manner that fosters transparency and a re-building of trust. Similarly, any associated measures required at the local and regional levels should be undertaken in this manner with the appropriate opportunity to engage stakeholders.

With respect to the transparent functioning of the Agency, the Panel recommends that a public representative sit on the board, that a transparent process be established to select board members, and that decisions of the board be included in the annual report of the Agency.

Strengthening the confidence in our capacity to manage outbreaks and threats to health and well-being will require additional capacity at the provincial level. This capacity must also be visible and accessible, independently reviewed, and be reflected in the transparent manner in which the structure and functions of the Agency are designed.

We believe that the process of role delineation between the Ministry and the Agency as outlined later in this chapter should be accompanied by the appropriate mechanisms to keep healthcare providers and the field informed as the process evolves. The process should also include a mechanism for gaining advice and guidance from experts outside of those within the Ministry and the Panel.

B. Accountability

i. Agency Performance Plan

The Agency, once fully operational, should be obligated on an annual basis to publicly set clear goals, report on progress achieved (and not achieved), evaluate its performance against stated objectives and against stated goals, as well as any factors or barriers to achieving these goals.

The British Columbia Centre for Disease Control (BCCDC) is a valuable example of transparency in terms of the detail and rigour applied to its published annual performance plans. For example, the 2003-2004 BCCDC plan covers all areas of the agency's work with clear identifiable goals set for the year and appropriate measures against which the agency can be judged. The plan is publicly available and posted on the agency's website.[8] Along the same lines, the Institut National de Santé Publique du Québec produces a performance report that highlights progress, goals, objectives, indicators, and results. The report is available from the Institut's website.[9] No comparable plan of such focus and comprehensiveness exists at this stage for public health in Ontario.

ii. Audit Process

The expenditures of the Agency should be subject to annual audits and be tabled on a routine basis with the Legislature. Once the Agency is operational, the Panel envisages an obligation for the Agency to provide audited financial statements to the CMOH. The CMOH provides them to the Minister who tables them in the Legislature on a regular basis.

In additon, as was highlighted in the Naylor report, there is a clear need for accurate and accessible reporting of overall public health expenditures as well as expenditures by local Public Health Units, including both provincial and municipal costs. The Ministry should therefore either modify the manner in which overall total public health expenditures are shown or have the Agency develop a method whereby resource allocation at both the provincial and local levels are made public in a clear and identifiable manner.

C. Anchoing a Multi-disciplinary Team of Experts

To be effecive, the Agency must develop a solid network of expertise to supplement the skill sets housed within the Agency. This would provide the Agency with the capacity to broaden the available range and depth of skills to wich it, and ultimately health units and providers, would have coordinated and streamlined access.

The Panel is very aware that the next catastrophe to hit or the next newly emergent infectious disease likely to strike may be completely different than SARS. Recent studies presented to the UK Royal Society suggest that as many as 25 newly emergent infectious diseases are likely to hit within the next 30 years[10] – this implies that the breadth of expertise required to anticipate, plan, and respond to these health threats will be broad, and certainly greater than what could logically be housed in any one agency.

We recognize that one approach to becoming appropriately prepared is to establish a formalized network of scientific expertise that can be rapidly assembled to link with the central ongoing coordinating structures proposed in this Report. If well organized and anchored, this approach will equip us to better respond in a timely, rational, and cost-effective manner. In this regard, the Agency would need to have clear links, for example, to expertise in infection control, emergent and tropical diseases, zoonotic diseases, water and food-borne disease, and more broadly to expertise associated with biological and radiological threats.

Here, the concept of peer-recognized 'affiliate scientists' may have tremendous value. This approach, utilized by many established research organizations, would enable the Agency to develop and drawn upon a team of expert resources from a range of areas, operating under agreement with the Agency. While it is unrealistic to think that an agency could employ an expert in all areas of emergent diseases and public health risk, it is reasonable to expect that formal channels be put in place to facilitate rapid access to a wide range of scientific skills by both the Agency and via the Agency to local providers.

The Panel therefore envisages that the Agency would perform the role of an organizational hub, facilitating access to a network of scientific and operational expertise. This role can only be strengthened through appropriate alignment with the Canadian Public Health Agency and liaison with other provincial research centres, agencies, and academic institutions.

Ontario clearly has the necessary scientific and technical expertise within the province to undertake this task. However, it currently lacks a centralized organizational hub around which this critical mass of expertise can be constructed and linked to broader public health, emergency response, and infection control efforts on the front-lines of healthcare. The proposed Agency could adopt a valuable organizational role in this regard.

The Panel envisages that this would build on some of the work already undertaken to create such a network, but in addition would enhance these informal efforts through a greater formal profile, dedicated resources, and dedicated central support. This approach would also allow the province to build on the informal and occasionally semi-formal network of expertise that has already emerged from SARS.

D. Integrity and Credibility

Given the Agency's proposed responsibility to generate evidence and research, mechanisms should be put in place to ensure that Agency reports and products are produced and published in a timely manner.

It is critical for the credibility of any agency that the manner and scope of reporting be broad enough to allow it to report on the findings of its research and potential areas that the Agency believes require attention by the province, by providers, and by the public.

The Panel recognizes that, based on the above approach, a creative tension may exist at times between the corporate needs of the Ministry and the nature of the evidence or findings generated or accessed by the Agency. However, in order for the Agency to gain integrity and credibility, it is essential that the Agency be given the autonomy to generate and publish evidence-based data.

The proposed Agency should be formally authorized to make its reports accessible to the public and to healthcare providers, and as appropriate to the legislature through the Chief Medical Officer of Health and the Minister.

The Panel believes that effective models exist that allow for such a functional relationship. For example, both the Canadian Institute for Health Information (CIHI) and the Institute for Clinical Evaluative Sciences (ICES) have protocols in place with various levels of government whereby they must give prior notification of forthcoming releases, while retaining clear independence over the content of their work. This principle has been proven in practice and should be emulated in the founding agreements and legislation governing the Agency in addition to the additional protections proposed for the Chief Medical Officer of Health.

i. Report on the Health of Ontarians

While the nature and type of reports required will change over time, formal reporting should exist alongside the authority to generate evidence and studies of relevance to public health in Ontario. The Panel envisages that the reports would include:

- an annual or bi-annual Ontario Health Status Report, in conjunction with the Public Health Research, Education and Development Program (PHRED), ICES, and other appropriate research partners at the provincial and national levels;
- Emergent Threat and Public Health Risk Reports;

- issue-specific reports, as directed by the Chief Medical Officer of Health; and,
- state of infection control in Ontario.

ii. Public Health Performance Report

In the Initial Report, the Panel recommended the development of an annual performance report for public health in Ontario. It is envisioned that the Agency, in collaboration with research agencies such as ICES, would provide technical support and advice in the development of such a report.

This report would provide a progress update on various public health components, such as human resources and public health capacity assessments, information technology, facility-acquired infections, compliance with *Mandatory Health Programs and Services Guidelines*,[11] and epidemiology.

E. Cross-Sectoral Support: Operating Beyond the Silos

One of the practical advantages of creating an Ontario Health Protection and Promotion Agency is the opportunity to conjoin and solidify a number of currently disparate, yet related functions. We need to do so in a manner that helps us address one of our critical system disadvantages, which was highlighted so clearly during SARS: the fragmentation and sometimes lack of consistency in the current approach to public health, infection control and disease risks that cut across sectors.

A case in point is the current divide between our approach to community-acquired infections and facility-acquired infections. For example, a virus caught in the community and subsequently spread in a hospital setting can and has resulted in massive costs and disruption to patient care at an acute care facility. The limited local coordination and lack of a single hub supporting a coordinated approach between institutions and across jurisdictions remains a vulnerable point in the system. While exceptions have begun to develop at the local level in the aftermath of SARS, ensuring that this positive work reaches its full potential will require formalized provincial support and infrastructure. The Agency has a critical role to play in this task.

An agency should therefore not be allowed to become one more silo among many; rather, as part of its founding vision, it should be charged with supporting coordinated approaches to communicable and infectious disease control that cross between sectors and which strengthen collaboration at the local and regional levels.

F. Partnerships

Given the breadth of factors that pose a risk to human health and the jurisdictional and historic mandate boundaries that exist, even the most advanced and well-resourced agency must function in partnership with multiple agencies, governments, and structures on a day-to-day basis in order to ensure success.

No agency that functions effectively operates as an island unto itself. Rather, an effective agency cultivates and manages the multiple complex dependencies and interrelationships that exist between the agency and its partners at varying levels. Similarly, an agency model for Ontario is only one piece of a solution; it is a potential vehicle to enhance certain core activities that, if performed in partnership with others, will move the agenda forward.

G. Resource and Service Culture

Developing and launching an Ontario agency should also not simply be seen as moving structures. The process offers the province the opportunity to move beyond the sometimes adversarial relationship that appears to have grown between local Public Health Units and the Public Health Division within the Ministry. Some of this tension may be the result of the multiple roles played by the existing Public Health Division, competing demands on staff time, and pressures inherent in being both manager and adviser. It should also be noted that the turbulent and dramatic shifts in funding and policy emanating from the provincial level in the late 1990s also did not assist this relationship in flourishing.

The Panel heard from healthcare providers and Public Health Unit staff that there is a clear desire for a more effective, pro-active, and supportive central structure with a mandate to work with and assist healthcare providers and public health officials in doing their jobs effectively.

How can this balance be achieved? The Panel strongly believes that achieving this goal requires changes in the organizational structure, as well as cultural shifts and re-focusing at the central level. At the agency level, the balance of thinking must shift from one of overseer towards primarily being a resource and support to the field and the Ministry.

Put simply, the move to an agency structure should not just be doing the same thing in a different organizational body; rather, the move to an agency structure provides a unique opportunity to promote a change in culture and orientation at the centre of the system. With this in mind, the Panel foresees that the Agency will have clear responsibilities to work with and provide concrete support to local Public Health Units and healthcare providers. Public Health Units, hospitals, and healthcare providers have clearly told us that they do not have a pressing need for an additional manager or overseer. However, they have clearly stated that trusted and effective tools, training, and supports are needed.

3. Governance

The agency structure should support accountability and openness. We propose that the following components be incorporated in the foundational work of the Agency.

A. *Relationship to Chief Medical Officer of Health and Ministry of Health and Long-Term Care*

The Panel recommends that the Chief Medical Officer of Health (CMOH) act as the strategic head of the Agency, and be empowered with the appropriate legislative changes to enable the CMOH to speak independently. Operationally, the Agency would need to have a Chief Executive Officer responsible for day-to-day operations and providing scientific guidance to the Agency's work.

In the Initial Report, the Panel highlighted the need for the Chief Medical Officer of Health to have the authority to speak independently on matters of public health urgency and ultimately, to have the authority to report to the Legislature.

The Panel cited approaches in British Columbia and Manitoba as holding potential answers, and recognized that the latitude available to a Chief Medical Officer of Health to speak publicly has implications for the manner in which the agency is structured.

Provided Ontario ensconces the appropriate protection and authority for the Chief Medical Officer of Health to speak independently, it is logical that the CMOH can be responsible for the overall strategic direction of the Agency and can also remain within the Ministry without compromising the autonomy and independence of the Agency. By being assured of independence, the CMOH can release the Agency's work in a timely and effective manner. The Agency would retain the authority to release information reports after 30 days in the event that the CMOH does not.

The Panel is acutely aware of the risk that roles will be confused in the event of a major crisis if the relationships among the head of the Agency, the CMOH, Emergency Measures Ontario and the Emergency Management Unit of the Ministry are not well-defined and crystal clear to the government, the field and the public.

This fear of role confusion is also heightened somewhat by the prospect of the new Canadian Public Health Agency being created, the imminent appointment of a new federal Chief Public Health Officer, and the as-yet undefined relationship among the federal agency, federal public health officer, and provinces and territories. At least at the provincial level, the premium should be placed on clarity at this stage.

Put another way, the Panel believes that if a Chief Medical Officer of Health lacks the formal legal authority to speak on urgent matters of public health or to ensure that evidence relevant to the health of the community reaches the public domain, the Agency should have greater separation and autonomy from the Ministry and the government than is currently proposed.

However, if the Chief Medical Officer of Health has the formal legal authority to speak as necessary, then there is greater opportunity to marry the benefits of dexterity, agility, and critical mass gained from an agency structure with a single head of authority and formal linkages to broaden healthcare decision-making.

B. Board

i. Board Structure

An appointed expert board would oversee the Agency's ability to fulfill its mandate. The adoption of a formal board structure responsible for overseeing the financial and operational objectives of the Agency also allows for greater oversight and for the involvement of broader sectoral expertise. A formal board structure is an approach that has been actively pursued in a number of jurisdictions, most recently the creation of the new UK Health Protection Agency.[12]

Board membership should reflect a suitable breadth of skills, from which the Agency can draw. The Panel cautions against developing a board based on organizational or association affiliation, since the objective is to achieve a critical mass of diverse skills to run the Agency, and not primarily in assembling representatives of healthcare organizations. Clearly, it will be essential for the Agency to be involved and have links with healthcare provider organizations in order to gain acceptance and credibility – however, this can be achieved through mechanisms other than the formal board structure.

An effective board should also have solid governance expertise and the capacity to broaden and link the voice of the Agency beyond the confines of the Public Health Units. In this regard, the Panel sees a specific need for laboratory expertise, hospital sector expertise, and

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community provider expertise, in addition to individuals with solid experience in agency governance.

A board structure also provides a practical and appropriate vehicle by which the Ministry, the federal agency, and the provincial agency could be more effectively linked. There are clearly opportunities within this type of model for appropriate cross-appointment and ex-officio representation thereby weaving links between national and provincial efforts in a more formal way. The Panel has discussed and concluded that the final board structure should also include public representation.

The Panel also recommends that the Chief Medical Officer of Health be an ex-officio member of the board to ensure a link to the broader direction and functioning of the Agency.

A board structure is obviously no panacea and will clearly need to co-exist with a range of other appropriate mechanisms to ensure transparency.

i. Board Appointment Process

In order to achieve the benefits proposed above, careful consideration must be given both to who sits on the board and how they are appointed.

With the current focus on the importance of accountable governance, the membership and the mechanism for recruiting membership must be appropriate and transparent. While board members may end up being appointed on an Order-in-Council basis, it will be important that the board is selected on the basis of credibility and expertise, and not on the basis of political alignment. To facilitate this, the process of selecting board members should be transparent and involve an external review of individuals proposed through a submission or nomination process. Ideally, a prominent, independent, expert-based review body should be charged with developing a list of potential board members, from which final selection will be made. This list should effectively comprise a larger number (i.e. 12), from which the Minister selects eight to ten members. To provide a further safeguard for continuity on the board, it is recommended that the board members be appointed on a staggered basis (i.e. for different terms).

C. Founding Legislation

Funding legislation and detailed Memoranda of Understanding outlining the linkages to the Ministry, Emergency Measures Ontario, and other relevant partners will likely be required to formally codify the specific functions of the proposed Agency.

The recent Quebec *Public Health Act*[13] and the founding legislation for the Institut National de Santé Publique du Québec[14] are excellent examples of how legislation has clearly delineated the roles and responsibilities of the local regions in the area of public health, and has defined and established core roles with regard to public health emergencies.

The legislation of the Institut has clearly articulated roles and responsibilities and bridges well with the overarching *Public Health Act*. Similar legislative clarity will be required in Ontario *vis-à-vis* the core aspects of provincial legislation (e.g. *Health Protection and Promotion Act*), the potential health protection legislation that may emerge at the federal level, and with the existing and emerging privacy regulations.

It is also clear that insofar as the Agency will be required to undertake infectious disease and other health status surveillance measures, the appropriate oversight and authority to collect, use, and disclose personal health information will need to be in place. This too may require amendment and explicit authority via provincial legislation. Furthermore, in the event of an outbreak or for test verification, pertinent health information may need to cross jurisdictional boundaries, which will require alignment with federal legislation to ensure that a network of agencies can function in a seamless manner.

By bringing forward legislation to anchor the role of the new Agency, Ontario would also provide an opportunity to hear from the Legislature and from the public through a formal, structured approach.

The Panel has benefited from reviewing the work undertaken by the European Commission, the executive body of the European Union, to craft the foundational framework for the new European Centre for Disease Prevention and Control and has been briefed on the foundational work in the U.K. to enshrine the Health Protection Agency as a formal legislated service agency.

In drafting the founding legislation for the Agency, the Ministry is encouraged to review the comprehensive legislation in place in other jurisdictions covering such issues as governance, conflict of interest, dispute resolution, and delegation of authority.

4. Program Funding

One of the core differences between Canadian public health agency models and the US CDC is that one of the CDC's many roles is to flow through significant funding to the state and local levels, for targeted programs as authorized and funded by Congress. In some states, up to 70% of public health funding comes from funds approved by Congress and flowed from the CDC to the local levels. The CDC is able to exercise some control over strategic objectives as a result of its funding responsibilities; however in the U.S., the Department of Health and Congress ultimately still play the major role in determining priorities.

The Panel has discussed the prospect of the proposed Ontario Agency undertaking a funding role on behalf of the Ministry, with the responsibility to flow funds to the Public Health Unit level. However, we decided not to propose this model at this stage, based on the following major reasons:

a) risk of bureaucratization

In Ontario, the vast majority of health service costs are funded at the provincial level; it is at this level that the infrastructure and staffing processes are already in place for the functions to be performed. Duplicating this infrastructure at the agency level would unnecessarily increase both the bureaucratic nature and the costs of the proposed agency.

This is further complicated by the role of municipalities in the direct funding of public health in Ontario.

b) adviser and funder

The Panel also raises the question of whether adviser and funder roles at an early stage in the Agency's development would be a challenge.

This is probably a greater challenge at the provincial level than at the national level given the greater degree of separation that generally exists at the national level between frontline service and funding. Given that one of the Agency's first tasks is to build confidence in the integrity of the information and services provided, it is unwise to place the Agency open to criticism that its advice may be tailored by its overall fiscal concerns.

c) fragmented funding

We are also concerned that with the current municipal/federal/provincial funding split, adding a third funding stream through the Agency, alongside a number of additional programs (such as Healthy Babies Healthy Children) that are 100% provincially funded and which would not be part of the Agency in the short-term, could further fragment an already confused terrain.

It would also create the clear possibility that public health funding for certain programs would come from the Ministry and certain others from the Agency as it evolves. This has the potential to be confusing.

duplicative, and undesirable, especially in the early days of the Agency's development.

5. Core Functional Areas

The following section describes each of the functional areas in more detail as set out in the diagram below.

A. Communicable Disease and Infection Control

In the area of communicable disease and infection control, the Panel sees a clear need for establishing and linking a central resource, information, and support centre in the form of a dedicated Department of Communicable Disease and Infection Control.

The Panel believes that scientific and operational expertise should be created centrally. Over time, this department of the Agency could act as a

Figure 1: Core Functional Areas of Ontario Health Protection and Promotion Agency

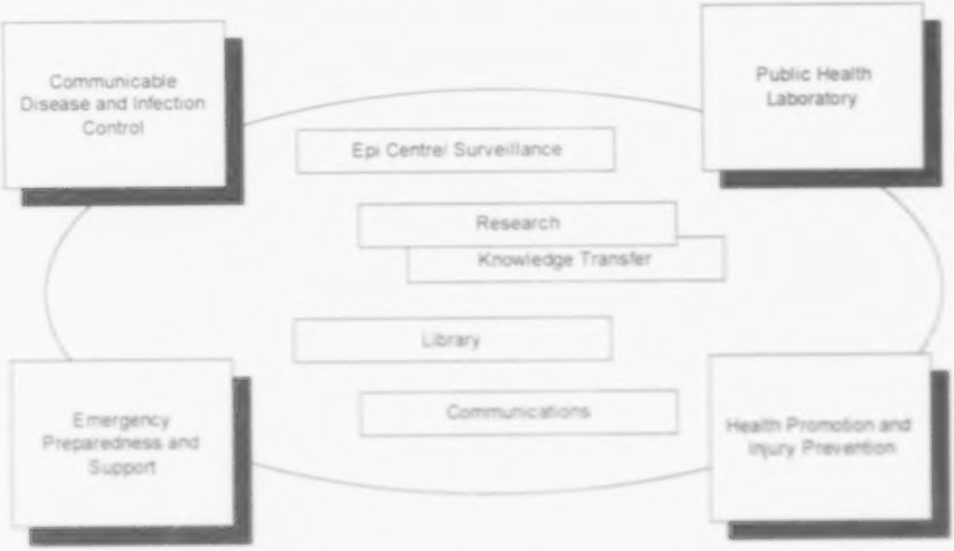
Communicable Disease and Infection Control
Public Health Laboratory
Epi Centre/ Surveillance
Research
Knowledge Transfer
Library
Communications
Emergency Preparedness and Support
Health Promotion and Injury Prevention

Figure 1 illustrates the key core functional areas for the Agency, highlighting the four cross-cutting and foundational functions encompassing surveillance, research and knowledge transfer, library and communications. These functions are not mutually exclusive, but rather intricately connected, and serve as the foundation for supporting, promoting, and protecting public health in Ontario. Additional responsibility for areas such as health promotion and injury prevention may be added to the Agency's mandate at later stages, as the Agency becomes more established.

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resource and support to Public Health Units and to the broader healthcare sector, ideally through the proposed Regional Communicable Disease and Infection Control Networks detailed in Chapter Two.

Hence, the Panel anticipates that the new Agency would have a specific role in assisting and addressing both facility-acquired infections and communicable diseases.

At a time when facility-acquired infections have been identified as an under-addressed and increasing problem (and a problem that some have estimated to result in up to 8,000 deaths per year in Canada[15]), the Panel sees an opportunity to develop a coherent central support that jointly harnesses expertise in communicable disease and infection control and recognizes the fact that diseases acquired in the community can go beyond the community in their impact. The Panel also recognizes that infections acquired at the facility level are a major and currently largely invisible risk to the patient, healthcare providers, and the community depending on the outbreak.

To better link efforts, we also need to undertake the type of clarification and role review outlined in the Initial Report. This involves reviewing and clarifying the *Mandatory Health Programs and Services Guidelines* regarding hospital-based activities, in relation to the role of the Public Health Units. The Panel reiterates the need for this review to be undertaken on an inclusive basis as part of achieving greater clarity between the sectors.

A fundamental operating principle of the new Agency should be advancing the shared grounds for cooperation, to which it could bring a common pool of resources from which diverse sectors can draw – this common point of linkage would assist in building a shared knowledge and resource base between sectors at the field level and in doing so improve both consistency and our capacity to respond.

Designing an agency with the philosophy of 'one agency with multiple clients' would also undercut some of the risks of an emergent entity being seen as only having relevance to public health or *only* having relevance to the acute care sector.

A Department of Communicable Disease and Infection Control is a core component of any new agency, along with the development of a cross-cutting Provincial Communicable Disease Committee. The Panel takes the position that the province requires a single standing resource committee and regional networks for communicable disease and infection control, supported by the appropriate, dedicated staff. As recommended by the

Panel, the provincial and regional networks should function as a vehicle for promoting improved consistency, better coordination, and improved use of evidence in support of care and services across a range of sectors. This model is explored further in Chapter Two.

B. Strengthen Laboratory Resources

The ability to provide timely and accurate lab information to those involved in structuring the province's epidemiologic analysis and overseeing the surveillance efforts is key to an effective surveillance system and to a responsive public health system.

In the Initial Report, the Panel highlighted the need to align the public health laboratory system and the epidemiological and surveillance functions. The Panel also called for immediate short-term action to address the significant shortage of microbiology expertise and medical leadership at the existing Central Public Health Laboratory.

In looking to the future, the Panel strongly suggests that the province aims to co-locate a revitalized Central Public Health Laboratory with the Agency. This will involve new lab capacity being built over time; Ontario should vigorously pursue this in addition to federal support to assist in it being realized. The Panel also believes that there are tremendous opportunities to develop formalized and much closer linkages between the central laboratory and the laboratory infrastructure at major academic health sciences centres in Ontario. The Ministry should actively seek to retain the focus and vision of the Public Health Laboratory while ensuring that it is part of a formal, broader critical mass of expertise through the appropriate partnerships with lab networks at the federal and provincial levels.

A clear hallmark of the effectiveness of the BC and Quebec agencies is the co-location of laboratory expertise within the agency structures. Co-location allows for rapid on-site review of emergent issues, and ensures that the perspective of those involved in the testing and laboratory analysis components of surveillance and response are integrally and directly linked to the efforts of an overall team.

What is clear from the review undertaken to-date is that while the question of alignment is important, it should be placed in the broader context of the need to revitalize the public health laboratory system and, most critically, the Central Public Health Laboratory itself. In addressing this component, the Panel has drawn on external advice and on an initial comparative review undertaken of the Ontario Public Health Laboratory system as well as systems in eight other jurisdictions.

i. Comparative Information

The Panel stands by the recommendations related to laboratory capacity in the Initial Report, with one caveat: based on the comparative study undertaken, we believe that the recommendation to immediately proceed with the addition of two senior medical microbiologists somewhat underestimated the degree of need. With only two medical microbiologists in place at the time of the Initial Report, the Panel called for an immediate doubling of this number. On the basis of the data we have now reviewed, it is clear that a minimum of four additional positions are needed in order to reach an acceptable level of microbiology support. The current two medical microbiologist positions are clearly inadequate for a population the size of Ontario, a fact that is highlighted when compared to other jurisdictions.

In recommending the alignment of the central laboratory with the agency structure, the Panel is aware that there will be an ongoing need for an effective link to the Ministry and to a number of the programs pertaining to the overall public and private laboratory system in Ontario. An example of this is the realm of laboratory quality assurance provided through the existing QMPLS system and the need to ensure that even when co-housed with the Agency, the Central Public Health Laboratory is able to access the support of this program.

Jurisdiction	Staffing Information	Extrapolation for population of 12 million (size of Ontario)
Michigan	State of Michigan is the closest match to Ontario in terms of population size and characteristics. The Michigan State Public Health Laboratory reported that they have two Dr. P.H.s in management positions, one Dr. P. H. in a lead position, one MD microbiologist in a leadership position, 9 PhD scientists (in various subspecialties of disciplines of microbiology as well as four molecular specialists). These should be considered minimums as Michigan State PHL currently reports some understaffing.	• 3.6 (mix of microbiologists and public health physicians) • 1 medical laboratory director • 10.8 PhD scientists (clinical and research)
British Columbia	The Laboratory Services of British Columbia Centre for Disease Control report that they have 3.8 FTE medical microbiologists and 3.3 PhD scientists. Generally, the BC Laboratory has the type of mandate that is envisaged for the Ontario PHL. Ontario has a population that is about three times that of B.C.	• 11.4 medical microbiologists (including Medical Laboratory Director) • 9.9 PhD scientists (clinical and research)

The laboratory realignment is a complex and challenging component of the Agency design. In this chapter's section on staged implementation, the Panel outlines a series of foundational steps that are required to ensure that the realignment helps achieve the strategic objective of a strong, revitalized laboratory at the heart of an effective agency, and not simply a change in an organization chart.

ii. Link with Zoonotic Research and Animal Health Research
There is much to be understood regarding the knowledge, science, and research on animal health and its relationship to human health protection. In this regard, the Panel believes there are solid opportunities at both the laboratory and research levels to form enhanced links among the Agency and federal bodies such as the Foodborne, Waterborne and Zooonotic Infections Division, and the Division's Laboratory for Foodborne Zoonoses, located in Guelph. We actively encourage the pursuit of linkages in this field.

C. Support Emergency Preparedness Measures

The Panel recognizes that the impetus to develop a Health Protection and Promotion Agency in Ontario comes from a period of reflection on the experiences and challenges faced by healthcare providers and the province in managing the SARS outbreak. Therefore, it is understandable that some will argue that any new agency should be charged with formal leadership of managing all health emergencies in Ontario. The Panel does not share this opinion.

Firstly, even focusing solely within the confines of one event impacting the health system, there is no agency that currently exists that has direct authority over some of the most critical components of emergency response and management – not the CDC in the United States, or the UK Health Protection Agency. In a state-level health emergency, the CDC is typically called in as requested by the individual state authorities responding to an emergency. On a broader basis, the CDC will frequently work with another lead agency and/or with local officials on the ground.

Depending on the nature of the emergency this may be either the senior public health official at the state level – or the head of emergency response. In most US states with state-level public health agencies, it is common to have both a general emergency preparedness capacity within state level health departments and within the public health agency. This approach is rational when one considers the wide breadth of components that might be implicated in an emergency – namely, the emergency response system, hospital system, community providers, etc.

The Panel, however, sees a clear need to entrench surge capacity and enhance support capacity for certain core areas of emergency preparedness support within the Agency. This would include the ability to offer a breadth of practical, on-site field support, to issue alerts on emergent health issues as appropriate, and to provide scientific and technical advice as required – all activities consistent with its overall mandate.

The primary functions envisaged for the Agency in the area of emergency preparedness are to:

- provide critical scientific and technical advice and support;
- function as a conduit of information to the field and to the Ministry;
- act as a window to a broader network of scientific advice;
- house core surge capacity in public health;
- provide timely alerts to the field and Ministry;
- scientifically assess risk; and,
- provide scientific, epidemiology support to the field as required.

In this regard, the Panel sees an ongoing need for a core capacity responsible for enhancing system-wide emergency preparedness within the health sector; this core capacity should reside within the Emergency Management Unit at the Ministry, as proposed in the Initial Report.

As the Agency is developed, there will need to be a formal process to precisely define roles and responsibilities among Emergency Measures Ontario, the Ministry, including both the Chief Medical Officer of Health. and the recently created Emergency Management Unit.

In the Initial Report, the Panel recommended a review of existing legislation setting out emergency and related powers, with a view to establishing a graduated response system for health emergencies. The Panel acknowledges that such a response system can be developed through a variety of means, but will need backing by legislation that contains sufficient powers and clarity. A graduated response system may be achieved through a policy and protocol approach dependent on specific risks faced. Further, it is important that provincial emergency powers legislation aligns with that in existence at a federal level, in order that emergency responses can be coordinated nationally.

D. Health Promotion and Injury Prevention

The Panel recognizes that the areas of health promotion and injury prevention are integral components of any public health system. Ontario's experience with SARS brought to the forefront the public health challenge of infectious diseases. However, the prevention and control of chronic diseases continues to be a key priority for the health of the people of Ontario. Health promotion and injury prevention activities have focused on the risk factors associated with chronic diseases, using multiple and complementary strategies (healthy public policies, community mobilization, education, social marketing) in various settings such as communities, schools, workplaces, and hospitals.

Ontario has a long history of innovation in development and support of health promotion as well as injury prevention strategies at the local and provincial levels. The Ministry has played an important role in supporting these innovations through demonstration programs, specific strategies and programs (Heart Health, Stroke Strategy, Tobacco, etc.) targeted grants for programming and research, campaigns, as well as the establishment of a system to build capacity of health promotion practitioners (Ontario Health Promotion Resource System). The health promotion landscape in Ontario is complex and encompasses activities by numerous players such as local Public Health Units, CHCs, hospitals, community groups, local and provincial NGOs as well as numerous partnerships and networks.

Protection and promotion go hand-in-hand. Public health agencies in other jurisdictions either have, or plan to incorporate, health promotion as part of their mandate. For example, current discussions with respect to the proposed federal agency's mandate include the responsibility for non-communicable diseases and health promotion. The BCCDC is planning to expand its services to include health promotion. And internationally, two of CDC's National Centers focus on injury prevention and control as well as health promotion. What is interesting to note is that in general, public health agencies have tended to focus on communicable and infectious diseases with a subsequent focus or incorporation of health promotion and injury prevention responsibilities.

The Panel believes that in order for Ontario to have an effective agency that promotes and protects the health of Ontarians, one of the core functional areas of the Agency should be health promotion and injury prevention. The Panel recognizes that it is important that the Agency effectively develop expertise, partnerships, and capacity to provide practical assistance and support in an overall health promotion agenda. To ensure that the vision of a comprehensive agency is not lost in the proposed approach to phasing implementation, it is strongly recommended that the Agency be required to bring forward a work plan and implementation framework by year 3 outlining the manner and timing for expanded health promotion capacity and functions.

E. Research/Knowledge Transfer

i. Create, Reinforce, and Solidify Partnerships with Research, Academia, and Healthcare Institutions

Earlier in this chapter, we presented in detail the need for the Agency to develop a network of research and clinical expertise from which it can draw. In many of the successful public health/health protection agency models that the Panel examined, there is a common theme of strong formalized links with academic institutions, regardless of each agency's specific history and how their specific model or organizational structure has evolved.

In the Quebec model, the Institut National de Santé Publique du Québec has formed strategic partnerships with a number of universities, including the Université de Montréal and Université de Laval. Moreover, as part of its founding legislation, the mission and functions of the Institut are explicitly tied to collaborating with universities and research bodies in a range of core areas including:

a. collaborating with universities in the design and updating of public health programs, and the design and implementation of continuing education programs in public health; and,
b. collaborating with research organizations and funding bodies to develop and promote public health research.[16]

In British Columbia, the agency formed and formalized direct linkages with the University of British Columbia in 1998, and in many instances instituted the cross-appointment of BCCDC staff with the University of British Columbia.

One of the core stated strategies of the BCCDC is currently:

> *"Creat(ing) an environment that is supportive of research and facilitates effective collaboration with other scientific institutions and researchers in B.C., Canada and internationally."*[17]

The Panel sees several valuable benefits in pursuing partnership agreements in targeted areas with academic centres. This observation is true in analytical, population health, and health system research, as well as in direct services such as labs, epidemiology, and surveillance activities. However, partnerships are not a substitute for robust in-house capacity at either the local or central level; they are an additional tool that can complement and assist the work that is required centrally.

While Ontario will no doubt face some significant challenges and hurdles in establishing a new agency, the province is extremely lucky in that it houses the leadership of many of our national research institutes in areas such as public health, human genetics, and health systems research.

In addition, health research bodies such as ICES, the Centre for Health Economics and Policy Analysis (CHEPA) and our academic health sciences centres are powerful resources that could be effectively drawn upon to enhance the analytical capacity of the Agency. Additional benefits clearly accrue from pursuing these links, as follows:

a) Recruitment and retention
Given the pending development of a national agency (which itself will be recruiting from a very limited pool), it will be critical to put in place approaches that will make it easier to recruit and retain high calibre individuals to lead the renewal effort in Ontario.

As the Panel noted in the Initial Report, multi-faceted and ongoing efforts are needed to effectively develop a public health human resource revitalization program. Three of the approaches that we highlighted as part of this revitalization program were: increased training opportunities; improved remuneration; and, greater recognition. One tool in this strategy is to harness the links between public health and the broader research community.

For many individuals wishing to retain a role in health system/ population health research, the opportunity for a cross-appointment with an academic institution has significant benefits. In a knowledge-intensive sector facing human resource challenges on many fronts, building learning organizations should be seen as essential. Many organizations in both the public and private sectors have begun to actively recognize that constructing a vibrant learning organization is a core tool of retention and recruitment. This is true as much for public health and infection control as it is for a growing private sector corporation.

In addition to enriching the knowledge base and resource pool available to public health staff, formal academic affiliation agreements could be used to achieve other concrete objectives such as shared research agendas and increasing the profile and appeal of public health as a career.

b) Surge Capacity
Several of the key individuals who assisted provincial officials during SARS were drawn from either academic health sciences centres or from academia. De facto, the province drew on resources external to the Ministry on a scale that has rarely been done before.

There are now clear opportunities for us to think creatively about how best to structure the Agency to allow Ontario to benefit from more formalized access to a rich vein of expertise. The concept of a network of expertise anchored at a strong hub and with its own critical mass is a cost-effective way to expand our knowledge base and complement the necessary surge capacity that every commentator has recognized needs to be in place. There are clear opportunities in this regard in both the laboratory sector in epidemiology and in infection control.

ii. Public Health Research, Education and Development Program (PHRED)

To the knowledge of the Panel, Ontario has not been as aggressive as it could have been in pursuing direct academic affiliation/alignment as a mechanism to bridge expertise between the public health sector, Public Health Division, and the university sector. However, the Public Health Research, Education and Development Program (PHRED) is an example of where attempts have been made to do this.

For many years, one bridge between the Public Health Division, certain health units and the academic sector has been PHRED. PHRED currently involves five sites: Ottawa (with University of Ottawa), Middlesex-London (with University of Western Ontario), Hamilton (with McMaster University) Kingston, Frontenac, Lennox and Addington (with Queen's University) and Sudbury and District (with Laurentian University). Since 1999, PHRED has been co-funded (50-50) between the province and municipalities. There was also a site located in Toronto that no longer exists due to the challenges of identifying matching funding, as required in the 50/50 cost-sharing formula.

The mission of the program is to contribute to health promotion, health protection, and the prevention of health problems among residents of Ontario through five strategic directions:[18]

- applied public health research and program evaluation in areas critical to effective and efficient public health practice;
- public health knowledge synthesis, dissemination, and diffusion;
- leadership in undergraduate, graduate, and continuing professional education;
- continuing education for public health practitioners; and,
- supporting innovative public health programs and policy development.

PHRED has been highlighted by the Canadian Institutes of Health Research (CIHR) as a model worth emulating on a national scale. However, in interviews conducted by the CIHR with those involved with or using the program, three critical challenges were identified as follows:[19]

- lack of central Ministry engagement at the Public Health Division level;
- limited information dissemination and knowledge transfer from PHRED-affiliated sites to the public health system in general; and,
- funding shortages overall and uncertainty associated with the 50/50 approach to provincial/municipal cost sharing of the program.

The Need for a Public Health Research Framework

Ontario has funded research in a broad range of areas pertinent to a Health Protection and Promotion Agency; one of many examples is the research funded at the Ontario Tobacco Research Unit (OTRU). However, at the provincial level there is presently no strategic framework in place for a focused and relevant research agenda in public health and infection control. Furthermore, there are very limited formalized cross-appointment processes in place with academia at the Public Health Division level of the Ministry. This does not assume that there are no linkages at an individual level, but it does highlight the need for this effort to be conscious, formal, and focused.

In addition, some have suggested that the breadth, focus, and areas of specialization need to be formally reviewed and clarified.

The Panel sees real value in the work undertaken by PHRED. The Panel believes that once PHRED is reviewed, it will benefit greatly from a clear and formalized link with the Agency as an additional mechanism to link the work at the regional centres to a core dissemination and knowledge transfer strategy to all Public Health Units and beyond. The PHRED Program, and indeed a number of funded public health research activities underway, would also benefit from a more cohesive overall framework for public health research being articulated centrally.

iii. Knowledge Transfer/Tools and Supports

a. Training

While the Panel does not envisage that the Agency will evolve into a training institute, nor do we believe it can be all things to all people in the area of training, we do believe that there are opportunities for strong partnerships and, in some circumstances, direct training.

The Panel envisages an agency with the authority and/or capacity to:

- undertake training needs assessments in order to highlight areas of critical future training needs for others to take action as required;
- provide targeted training directly in defined areas of high need; and,
- enter into agreements and partnerships with others to provide training.

It is interesting to note that the mission statement of the Institut National de Santé Publique du Québec formally extends into collaborating in the design and updating of health professional training at the graduate and undergraduate level, and implementing continuing education programs in the area of public health.[20]

Obviously, the scope of formal training that the Agency undertakes directly compared to the areas in which it advises and supports others will need to be carefully developed based on a detailed assessment of existing mandates and training capacities of other organizations, government ministries such as the Ministry of Training, Colleges and Universities, and the resources available to the Agency.

There are clearly pressing needs in certain areas that could be greatly assisted by the support, resources, and dissemination capacity of the Agency. These include: expanding access to training in epidemiology at the health unit level; working with others to develop model staff orientation templates on facility-based infection control; and, promoting and developing in-service modules.

b. Tools

Tools make research relevant. With the existing challenges faced by healthcare providers on a day-to-day basis, it is often a challenge for providers to have time to keep up with the evolving evidence/science pertaining to emergent issues in public health and infection control.

This challenge is far from unique to public health. There is extensive literature on the challenges of translating science and evidence into useful tools in the health sector that actually get used. Recent work by the University of Massachusetts has highlighted the gap between the extensive work on 'evidence-based medicine' at the clinical level and the relative paucity of such work on the broader public and population health level.[21] Too often, research that is not translated into concise, focused, and practical advice is research that becomes lost and unused on the front lines of care. Doing this well will require examining existing successful models, creating a dedicated skill set in sciences and medical communications at the Agency, and listening to providers and health units about what works and what does not work.

The US CDC has effectively created a dedicated team within its central structure whose primary mandate is to take the science and research generated or accessed by the CDC and transform it into concise, focused tools that can be used immediately in the field.

During SARS, the objective was to get available information out. Now the job is to understand and improve the vehicles through which information is provided and what approaches work well in different environments.

Many of our facilities across Ontario have grappled with the challenges of responding to emergent or re-emergent infectious diseases, such as methicillin-resistant *Staphylococcus aureus* (MRSA), coliforms, and Norwalk. Individual hospitals and facilities often generate superb materials and advice to assist in managing these outbreaks or events. Examples of this include the protocols developed at Mount Sinai Hospital following the Norwalk outbreak in late 2002, and the policies and procedures developed by the UHN relevant to viral enteric diseases and MRSA. However, these valuable and highly practical tools are too often invisible to other healthcare organizations and agencies. The result is that collective history and knowledge is not sufficiently built at a system level. Too often, unless an individual or facility has access to the informal connections that facilitate access to materials that others have generated, the circle gets invented again. This is especially true for smaller facilities and more remote communities with more limited access to the larger, better resourced academic health sciences centres, or, in the case of the Public Health Units, to the larger, better resourced Units.

Having support tools, derived from the latest evidence and international experience, centrally accessible would not replace the need for facility- or community-specific adaptation. However, with the appropriate review, a central access point could complement and add value to the work of the proposed regional networks and existing Public Health Units.

F. Epi Centre and Surveillance

An Epidemiological Analysis Centre (EAC), proposed as part of the Agency structure, could provide analysis at the provincial level and, if sufficiently resourced, could also directly provide or facilitate access to expert assistance and support in investigating and responding to an outbreak in the field.

The ability to turn reported data into usable trend information rests on strong epi-analysis capacity being housed at both the field and Agency levels. It is also predicated on effectively linked laboratory and surveillance components, with high rates of data capture and rapid information transfer.

The Panel has been impressed by the US CDC's Epi-X system. Epi-X is an early alert and peer/expert consult mechanism for epidemiological information related to emerging health events. The system is overseen by

Examples of Some Effective Tools

Ontario boasts a number of highly successful projects in knowledge transfer that have clearly demonstrated the ability to make technical scientific information available in a concise and effective manner to healthcare providers. One example is *"Bloody Easy: A Guide to Transfusion Medicine"*, produced by Sunnybrook & Women's College Health Sciences Centre and with support from the Ministry, Health Canada, and Canadian Blood Services.[22] The Guide is Ontario's first transfusion medicine handbook, and effectively translates technical, scientific information concerning the use of blood products, alternatives, and transfusion reactions into a concise and user-friendly guide. *Bloody Easy* received immediate and international praise, and has been adopted as an essential resource by healthcare professionals across the province, as well as by Canadian Blood Services.

In another example, over the past two years, the Institute for Safe Medication Practices (ISMP) has developed a highly effective alert system for high-risk medications.[23] By producing information that is evidence-based, concise, credible, usable, widely disseminated and targeted to the needs of its users, ISMP has reduced significantly the presence of concentrated potassium chloride in Ontario hospital wards in less than 12 months. This form of practical, focused, and targeted support is precisely the type of intervention that, if done well, could have a high impact on both patients and healthcare providers for a relatively low cost.

the CDC laboratory and medical epidemiologists and provides 1,200 key health system experts, designated by their local agency or facility, with confidential access to early data. When necessary, local affiliates can obtain direct advice and assistance in order to proceed with investigations.

The Panel also sees the development of an enhanced epidemiology centre as a foundation of the Agency. A provincial centre, it would be mandated to act as a resource and support function to the field. At the request or direction of the Chief Medical Officer of Health, the appropriate technical and staffing supports could be deployed as needed to provide support, scientific, and technical advice to local professionals and providers.

As suggested, realizing this concept requires a more formalized and creative approach to the concept of 'surge capacity' than currently exists. The success of the concept will partly depend on the Agency's ability and support to connect with experts in the field.

To achieve a more useful and robust central epidemiologic support service to the field, we must not only improve the breadth, scope and timeliness of the data collected, but dramatically improve how that information is disseminated and analyzed. Geo-mapping techniques should be more effectively used, especially to look at region-specific breakouts and population-based trend analysis made available and relevant for local providers. Later in this Report, we provide steps as to how this could be achieved.

G. Library Services and Supports

The Panel sees significant value in ensuring that the Agency house sufficient capacity in information sciences and has centralized electronic access to the latest medical journals and research sites.

The Ontario Public Health Libraries Association has identified *Partners in Information Access for the Public Health Workforce* as an interesting model. The mission of this collaboration of US government agencies, public health organizations, and health sciences libraries is to:

> "Help the public health workforce find and use information effectively to improve and protect the public's health."[24]

As part of its submission to the Panel, the Association concludes that the exponential growth of information on the Internet and in print has led to information overload in many professions. Information professionals are needed more than ever to filter information and produce cost-effective, client-valued information.

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The Association has put forth the following key roles for information professionals in public health:[25]

- support and promote evidence-based health practice by providing expertise in searching key bibliographic databases and then obtaining the best information available for any given situation;
- provide educational programs for staff on effective searching of quality public health and health policy information, including the assessment of valid and reliable information;
- network with other individuals, organizations, and agencies to facilitate resource sharing and to provide access to broader and more cost-effective information sources;
- work in partnership with staff to promote knowledge transfer within the organization;
- determine criteria for identification, selection, and organization of public health information and educational materials;
- promote current awareness of emerging public health information resources;
- create and compile health information resources and/or pathways that are accessible via the Internet and other national information networks; and
- support continuing education by providing relevant resources and developing new education tools to meet emerging needs.

H. Communications

The Panel has been impressed by the US CDC's comprehensive communications infrastructure. The CDC supports its various organizational components (National Centers and Program Offices) through a breadth of communications activities (educational and support materials; website; professional, technical and information networks; training; campaigns; etc.) geared to different audiences (clinicians, practitioners, public and media), with distinct services for emergency and risk communications. The Panel also acknowledges the value of continuing to learn from these communications activities that were effective at the Ministry and local levels here in Ontario.

Building on these recommendations and based on discussions with experts in the field as well as public health agencies in other jurisdictions, we recommend that the Agency provide advice and support on risk communications to the Ministry, clinicians, providers, and practitioners directly. Furthermore, the Agency should also be required to establish direct communications channels to disseminate epidemiological and surveillance information, as well as to support the transfer of research, evaluation, and knowledge.

Risk communication is an interactive process of exchange of information and opinions among individuals, groups, and institutions concerning a risk to human health or the environment. It involves communicating about the probability of risk and nature of the risk, with knowledge of how people make choices under conditions of risk. Effective risk communication attends to both message content and message delivery.

Crisis communication entails the process of communicating in the midst of disaster through skillful management of communication channels, messages, timing, and delivery with the goal of de-escalating the crisis through information.

The following four main communications responsibilities are proposed for the Agency:

1. Resource to the Ministry
As part of the Agency's risk communications mandate, we envisage that the Agency would act as a resource to the Ministry regarding risk communications as well as specific public health topics or issues. Specifically, the Agency would provide technical and scientific advice to Ministry staff on an ongoing basis as well as during crises and emergencies. In certain circumstances, the Agency could also assume a broader or enhanced communications role at the request of the Ministry (for example, to assist in the development of public education material for use in a crisis or emergency).

2. Risk communications network to support communications practitioners
As a means of providing risk communications support to practitioners, a Risk Communications Network (RCN) should be established. The aim of the RCN would be to increase practitioners' capacity to undertake and evaluate risk communications activities. The RCN would be geared to a wide range of risk communications

stakeholders, including public health practitioners and information professionals from various organizations (Public Health Units, NGOs, hospitals, Community Health Centres, government, associations/ regulatory bodies), researchers, media, and students.

Some of the key features of the RCN include:

- facilitating practical links and exchanges between risk communications providers, by establishing a risk communications database. These links could be fostered through virtual communities, including discussion groups and list-servs, as well as face-to-face events;
- developing and brokering access to tools, templates, and other resources (such as best practices, abstracts, research briefs, etc.) on risk communications to build capacity;
- establishing and maintaining a repository of information on risk communications within the Agency;
- providing and/or brokering access to shared training and advice in risk, crisis and emergency communications as well as in media relations*; and,
- using the Internet as a vehicle for communicating and disseminating information.

3. Dissemination of epidemiological and surveillance information
The Agency's mandate will include responsibility for surveillance and epidemiological analysis. Considerable work is being undertaken in Ontario (e-Health Strategy), as well as nationally (Canadian Network for Public Health Intelligence), to support innovative health information electronic collection and dissemination mechanisms. A focus of many of these initiatives is to manage personal health information rather than population-based information. In Ontario, an updated information system is needed to collect, analyze, and disseminate population-based information on communicable and non-communicable diseases that will support the development and revision of public health programs and activities.

Therefore, we recommend that the province establishes an information system to centralize the data that comes into the Agency as part of its surveillance and laboratory mandate. To this end, we propose that the Agency develop and support an Ontario Public Health Information System (OPHIS). OPHIS is envisaged as a mechanism that could act as a central repository of information emanating from various sources (such as local Public Health Units, laboratories, other facilities, and networks) – essentially a portal to epidemiological and surveillance information in both a raw and analyzed format. It is also envisioned that OPHIS will have the capacity to collate, analyze, and disseminate information to different stakeholders (internally within the Agency and externally).

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* Collaborative partnerships with The Health Communication Unit (THCU), Centre for Health Promotion, University of Toronto should be explored. THCU's mandate is to provide training and support in health communication to community and public health agencies. The THCU has recently established a virtual community for public health communication.

The intent would be to complement, enhance, coordinate, and add value to existing data collection systems, and not to simply build new systems for the sake of it. In conceptualizing the operations of OPHIS, it is clearly understood that there would need to be close collaboration with Ontario's e-Health Strategy, Smart Systems for Health Agency, ICES, as well as with Health Canada's Canada Health Infoway, CIHI, and the proposed pan-Canadian public health network and Canadian Public Health Agency. It is critically important to the Panel that there is a seamless health information system that responds to the needs of practitioners, the public, and government.

In terms of disseminating information, OPHIS could act as a resource on aggregate public health data, trends, and analyses to practitioners (public health specialists, epidemiologists, clinicians, etc.), government (ministries at the provincial and federal levels), academia, and others interested in epidemiology and surveillance (NGOs and health related agencies and institutes across Canada). Through OPHIS, different dissemination channels (web-based, electronic, and paper) would be used. For example, through OPHIS, the current Public Health and Epidemiology Report Ontario (PHERO)[26] could be expanded and enhanced to provide other types of public health information. Information provided via OPHIS would also support the Risk Communications Network.

In summary, the aim of OPHIS would be to provide:

- an integrated and comprehensive resource on Ontario public health epidemiological and surveillance information for practitioners;
- linkages among practitioners in Ontario, through establishing and maintaining a contact database such that practitioners would be able to contact and share resources;
- information, or access to information, on the surveillance of diseases (communicable and non-communicable) and threats in Ontario. Such information would go beyond providing raw data to also include analyses of trends and developing tailored reports (i.e., issue specific, geographic) for different audiences (i.e., media, general practitioners);
- linkages to other epidemiological and surveillance communication activities at the provincial, federal (i.e., National Disease

Surveillance information systems, such as Health Canada's Infectious Disease News Brief, Canadian Network for Public Health Intelligence), and international levels (i.e., World Health Organization, Pan American Health Organization, etc.); and,

- linkages to public health researchers (individuals and organizations) to facilitate the dissemination of research-specific information related to public health epidemiology.

Given the breadth of the information accessible through OPHIS, it should be supported by a web-site. Different levels of access would need to be created to restrict access to information and data according to the type of stakeholder (i.e., government, epidemiologists, practitioners, and media), the level of sensitivity of the information, and the level of authorization of the user.

Another important function of OPHIS would be supporting a provincial information and communications system to distribute health alerts. As recommended by the Panel in the Initial Report, this system would be the Public Health Alert Network (PHAN). The aim of PHAN would be to strengthen and support crisis and emergency response as well as preparedness at the local and provincial levels; PHAN would be a key component of the emergency preparedness system within the province.

It is envisioned that PHAN would be activated by the CMOH, and would work hand-in-hand through the appropriate central structures with the relevant emergency units locally, within the province (i.e., EMU, EMO), and federally (CEPR – Centre for Emergency Preparedness and Response). PHAN would handle specific communications operations for the health component of crisis and emergency situations that would be established in partnership with other stakeholders and based on an agreed-upon emergency response/crisis communications plan. The emergency response/ crisis communications plan would be an integral component of emergency plans and would delineate specific responsibilities and actions regarding the services provided by different stakeholders.

Some potential features of PHAN are listed below.

- Participation (access) would be limited to those individuals designated (as per specific protocols) as responsible or engaged in identifying, investigating, and responding to health alerts (within the health sector as well as other sectors).
- Different individuals would receive different levels of PHAN communication, depending on the nature of the communications.

- The capacity to issue different types of health messages, with corresponding agreed-upon protocols and guidelines, for subsequent dissemination and action:
  a) Health Alert – a message conveying the highest level of importance; warranting immediate action or attention.
  b) Health Advisory – a message providing important information for a specific incident or situation, which may not require immediate action.
  c) Health Update – a message providing updated information regarding an incident or situation, which would not require immediate action.
- The ability to receive and distribute time-sensitive information in a specified time period seven days a week, 24 hours a day and in both languages.
- An infrastructure that would support a high-speed, secure connection to transmit sensitive data and information.
- The capacity for rapid and secure two-way communications (using multiple channels, such as phone, fax, e-mail, broadcast messages, and pagers) among first-responder agencies, clinicians, and other relevant health officials (including governments), as well as the media where required.

4. Other communications activities

A number of ongoing communications activities would be undertaken, including:

- establishing a repository or library on public health to support its various responsibilities;
- establishing a public image, including a website, and other informational resources regarding the Agency; and,
- developing media-specific material (i.e., press kits, press releases/ articles, presentations) as part of its ongoing communications activities as well as in response to and during crises and emergencies (upon delegation from the CMOH).

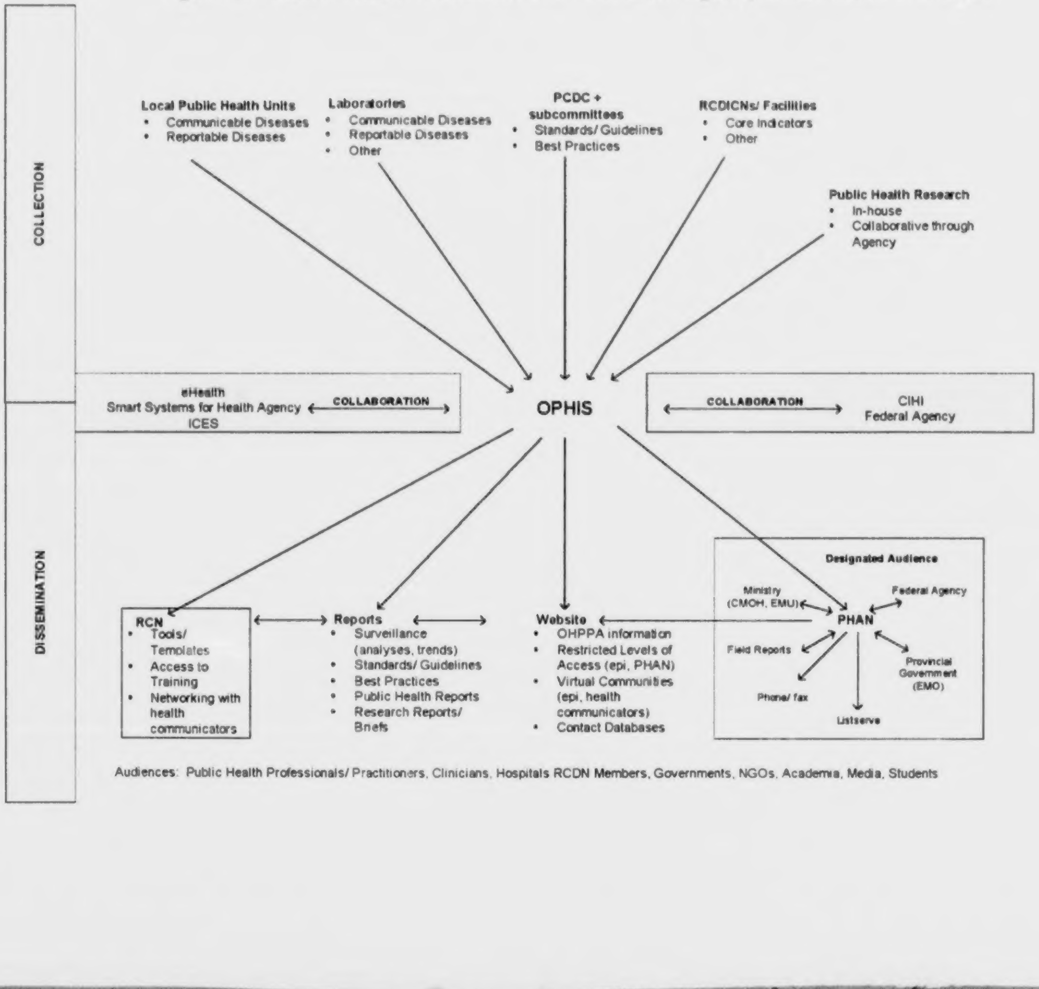
The Agency's capacity and flexibility to maximize its communications systems to support knowledge transfer and translation will be a key foundation. In addition, effective communications will be critical to the Agency's success in creating, reinforcing, and solidifying partnerships with research bodies, with the aim of enhancing public health practice.

Communications activities should also build on existing infrastructures and supports within the current health landscape in Ontario. That is, communications activities will complement, enhance, and support existing communications networks and structures (i.e., Ministry's Communication and Information Branch, e-Health Strategy, EMU), associations and service providers' networks, knowledge translation activities by NGOs and academia, etc.

There should also be clear and established guidelines in place among the Agency, Ministry, and healthcare institutions (governmental and non-governmental) to ensure, facilitate development, and coordinate the appropriate release and dissemination of information. Communications protocols and plans should be reviewed and evaluated on a regular basis with subsequent revisions and updates as needed.

Figure 2 illustrates information collection and dissemination processes via OPHIS. In addition, it highlights the relationship between OPHIS and the Agency's proposed responsibilities for RCN and PHAN.

Figure 2: Ontario Health Protection and Promotion Agency Information Transfers


COLLECTION
Local Public Health Units
Communicable Diseases
Reportable Diseases
Laboratories
Communicable Diseases
Reportable Diseases
Other
PCDC + subcommittees
Standards/ Guidelines
Best Practices
RCDICNs/ Facilities
Core Indicators
Other
Public Health Research
In-house
Collaborative through Agency
eHealth
Smart Systems for Health Agency
ICES
COLLABORATION
OPHIS
COLLABORATION
CIHI
Federal Agency
DISSEMINATION
RCN
Tools/ Templates
Access to Training
Networking with health communicators
Reports
Surveillance (analyses, trends)
Standards/ Guidelines
Best Practices
Public Health Reports
Research Reports/ Briefs
Website
OHPPA information
Restricted Levels of Access (epi, PHAN)
Virtual Communities (epi, health communicators)
Contact Databases
Designated Audience
Ministry (CMOH, EMU)
Federal Agency
PHAN
Field Reports
Provincial Government (EMO)
Phone/ fax
Listserve
Audiences: Public Health Professionals/ Practitioners, Clinicians, Hospitals RCDN Members, Governments, NGOs, Academia, Media, Students

Staged Implementation

The Panel acknowledges that the provincial government, and indeed the federal government, needs to move quickly to set up the Agency. The Panel is hopeful that the national or provincial processes will not become enmeshed in red-tape or lack coordination as our collective memories of SARS begin to fade.

That said, Ontario must also move responsibly; we have seen the impact of not doing so before. The 1990s saw massive and dramatic swings almost overnight in Ontario in the field of public health. Responsibility for public health funding shifted from primarily a provincial responsibility (75/25 cost split pre-1998 for all areas outside Toronto) to a 100% municipal responsibility in 1998 as part of Local Services Realignment; in 1999, funding shifted to the current largely 50/50 model. These rapid shifts in funding responsibility did little to enhance either the capacity for evidence-based advanced planning, or the level of confidence at the local level of the province's interest in or engagement with public health.

Building an agency will be an ongoing process. The pace at which it evolves will depend on a number of factors, including the Agency's ability to earn credibility and respect over time, and the degree to which decision-makers and funders remain committed and focused, and provide the necessary corporate support to realize the Agency. Ultimately, creating an effective health protection agency and revitalizing public health is a legacy project, not a quick win. That said, action needs to start now.

The dictum of Hippocrates, "above all else do no harm," should be guiding words for the manner in which the Agency is deployed. Ontario has a major advantage and opportunity in undertaking the design work for a new Health Protection and Promotion Agency; it has the rare opportunity to learn from others and craft an agency by design. The province, however, also faces the challenge of negotiating a complex web of pre-existing resources and centres of expertise. In addition, thinking through the appropriate approach to linkages, partnerships, and possible consolidations will be an extensive and complex task requiring dedicated support.

Before discussing the staged implementation of the Agency, the Panel wants to underscore the need for a series of activities to be undertaken in parallel with the agency design work. Most important of these many tasks is the need for a comprehensive and detailed review of the operations, capacity, governance, and possible consolidation of local public health in the province.

1. Staged Approach to Public Health Renewal

Our Initial Report called for a significant re-think of the approach taken to the funding and delivery of public health at the local level. We argued strongly in favour of the province playing an enhanced role in funding the delivery of public health services, stating that the overall percentage of provincial funding should increase to between 75 and 100% within two to five years, and that the initial priority should be on full provincial funding in communicable disease control.

The Panel also argued that the existing 37 Public Health Units were too diffusely organized, which prevented them from having sufficient breadth of expertise at the local level in some parts of the province, and argued that based on this, the Province should consider reinforcing and consolidating existing capacity to between 20 to 25 units. The Panel also recognized that there needs to be a greater degree of alignment between Public Health Units and other key health service areas.
The Panel stands by the overall belief that consolidation and alignment makes sense, but affirms that the approach to undertaking this change needs to be based on a firm foundation of evidence and a good understanding of the relative need.

We therefore urge that a needs-based assessment be conducted using the population and geography served by units as core factors to determine staffing needs by population. Where relevant, the appropriate international comparators should be considered. This assessment should include demographics, age and income, health determinants, health risks, and health status, and cultural diversity, and could begin with a review of work previously undertaken in 1996 to develop an evidence-based approach to funding allocations in public health.

It is important to determine what is required on a per-capita basis and the requisite skill sets that should be in place at a local level in order to ensure optimal coverage. This work should proceed so that it can be used in the necessary deliberations on Public Health Unit consolidation. In turn, determining what should be in place in terms of core capacity informs how these resources are best configured.

This process would also allow the province to begin to respond to the concerns raised by the Provincial Auditor about the inequity in the availability of public health resources.[27] In addressing capacity, the review should clearly include the governance-related factors that may impede or contribute to the successful functioning of local units. The Panel retains and reasserts the need for consolidation, but suggests that it must be based on evidence and on an honest and comprehensive assessment of the barriers to more effective functioning at the local level.

2. Staged Approach to Agency Development

Parallel to the Public Health Unit review, the Panel offers some advice regarding staging the implementation of the proposed Agency, including intermediary steps that may help move the process forward.

Over time, we see significant potential for the Agency to expand its focus into the area of health promotion and injury prevention. Health promotion activities and organizations in Ontario and nationally are broad, complex, and involve multiple partners at all levels. It will take time to appropriately negotiate the most effective role that the Agency can play, without duplicating the work of others. The Panel urges that a specific project plan should be initiated to determine the critical gaps and opportunities that the Agency could address over time.

The Panel stresses the importance of retaining a comprehensive vision for the Agency and the critical importance of health promotion activities for the population of Ontario. However, for the purpose of staging implementation, the Panel suggests that initially the fulcrum be centered on communicable and infectious disease control and that central scientific, laboratory, epidemiology, research, and training roles be set out.

Chapter Four provides further detail with respect to a proposed multi-year implementation plan for public health renewal, bringing together recommendations put forth by the Panel in its Initial Report as well as in this Final Report.

A. Transition Team

In order to translate the overall framework outlined in this Report into an Agency, it is recommended that the Ministry create a dedicated transition planning team with the appropriate legal, research, laboratory, public health, communications, and information technology expertise available, and be linked to the Chief Medical Officer of Health.

There should be a small parallel expert advisory group supporting this team, and a formal mechanism for obtaining feedback and providing information to relevant health sector organizations.

B. Initial Tasks

Following, we provide some direction on the key initial tasks that the Transition Team will need to undertake.

i) Surveillance coordination and strategic planning

Our Initial Report provided a detailed discussion of the areas of improvement required in the coordination, data collection capacity, and technological supports necessary for Ontario to more effectively track and respond to emergent and resurgent health threats.

One of our recommendations was the need for a provincial and federal emphasis on significantly strengthening the information technology support available to public health and in particular, to the laboratory sector.

We have echoed this need in this Final Report and suggest, on an interim basis, that the priority areas of activity include:

- Technical liaison with the federal government on efforts to create a linked and technologically advanced surveillance system. This would include actively collaborating with the Centre for Surveillance Coordination currently housed at Health Canada and examining innovative models currently deployed in other Canadian and international jurisdictions that could potentially be applied to Ontario. Particular attention should be paid to the work of New York State.

- Enhanced work in examining the opportunities to strengthen existing surveillance capacity through approaches that draw upon a range of existing data sets; these would include pursuing potential opportunities to use provincial Telehealth data and over-the-counter (OTC) drug sales data as an early warning system. Clear evidence now exists on the usefulness of OTC drug sales data as a signal for emergent health threats. For example, water-borne disease outbreaks provoke a surge in sales of anti-diarrhea medications.[28] This form of data, even at the OTC level, can be used for disease surveillance.

- Providing technical advice regarding new approaches/ methods to appropriately manage emergent diseases and recommend short- and medium-term measures to assist providers, Public Health Units, and the Ministry to better anticipate potential threats.

ii) Epidemiological analysis

Given the differing access at the Public Health Unit level to trained epidemiologists, and the general paucity of hospital epidemiologists, an early goal of the Agency should be to improve regional and centralized access to epidemiological analysis and support in order to address and manage local issues.

As an interim measure, the Ministry should conduct a comparative review of the approach, organization, structure, and information technology supports in place at the centralized epidemiology units at selected US state-level and Canadian provincial-level agencies. This review should identify best practices and technology supports that potentially could be incorporated into future agency design.

In addition, the Public Health and Epidemiology Report Ontario (PHERO) should be enhanced, as follows:

- Publish PHERO bi-weekly. PHERO is currently published on a monthly basis, with summaries of reportable diseases being provided with a two to three month time delay. Timely information would facilitate and enhance the exchange and dissemination of information and thus improve the support to practitioners and decision-makers. It may be useful to explore whether it would be feasible to have a bi-monthly publication, with epidemiological summaries published on a monthly basis.

- Expand the type of information. There is opportunity to expand the analysis provided with respect to the ongoing epidemiological information provided via PHERO. Providing these types of analyses (by issue and geography) would be a useful support to the field.

- Establish an enhanced comprehensive on-line capacity for PHERO. For example, on-line features could include the ability to search past issues by subject area, key word, as well as geography. Such on-line capacity could also allow for direct submissions. Additional features that could be considered include establishing a virtual community to allow for exchanges of and access to information and resources and the incorporation of geo-mapping capacity. These activities would support the work towards establishing OPHIS.

iii) Public Health Laboratory

Achieving co-location will take time and will need to be predicated upon a solid understanding of the existing capacity, drawn from a detailed organizational review of existing Central Public Health Laboratory capacity and a thorough examination of potential partnership approaches possible with the federal agency.

The following steps should be taken as interim measures:

1. The rapid introduction of dedicated laboratory liaison staff within the Public Health Division. These positions should bring public health laboratory expertise to the planning group and should be given a

mandate to work directly with the Central Public Health Laboratory to formalize and build improved linkages between the laboratory component and the surveillance and epidemiology components currently housed at the Public Health Division.

2. At the Central Public Health Laboratory level, the Panel sees benefit in recruiting senior medical leadership at the M.D. or PhD level. A formal liaison function should also be established within the Central Public Health Laboratory to liaise with the Public Health Division.

3. Implement a video-conferencing link between the Public Health Division in the Ministry and the Central Public Health Laboratory with a view to increasing the frequency and degree of engagement between public health and lab leadership.

4. Establish a joint planning body between Public Health Division and the labs branch within the Ministry, drawing on appropriate external expertise as required.

5. Based on our initial external comparative analysis, the following foundational steps should also be undertaken as a pre-requisite to and supportive of eventual migration of the central laboratory function of the Agency.

    a. A formal operational review should be undertaken of the Ontario public health laboratory system. The purpose of the review should be to determine what functional and procedural enhancements are required to ensure that the lab system is functioning optimally. This includes assessing the need for IT and technology supports, business processes, medium- and long-term medical and scientific capacity requirements.

    b. A review be undertaken of the existing range of testing provided by the public health laboratory system in Ontario and why. The typical core mandate of a public health lab is to focus on those forms of testing that are emergent and/or highly specialized in the public health field. The goal should be to clearly focus the agenda of the Public Health Laboratory and examine appropriate steps to mitigate the off-loading of certain forms of testing to public health from other sectors.

    c. The Panel reiterates the need for additional microbiologist expertise at the public health laboratory level. However, based on the review undertaken to-date, we recommend that four additional microbiologists are needed immediately. Additional microbiologists may be identified as necessary through the proposed operational review of the central lab. These four microbiologists are in addition to the minimum of two additional microbiologist positions recommended in our Initial Report.

iv) Research and knowledge transfer

As a first step in developing advanced research capacity within the Agency, the Agency should develop a vision and goals for public health research in Ontario, and should develop a formal research agenda. Specifically, the goal for the Agency should be to harness, focus, and ensure access and uptake of the best available research evidence from a range of sources, and not to replace or duplicate efforts.

As an interim measure, we recommend that the Ministry engage with both British Columbia and Quebec (at the agency and ministry level) to undertake a detailed understanding of the academic partnership approaches that they have employed, and the lessons learned from these approaches.

Ensuring that research actually has relevance, is heard, and perhaps most critically, results in change based on evidence is an enormously complex and challenging field.

As an interim step, the Panel urges a review of the approach, structures, and functions that have worked well for ICES, CIHI, CDC, and the UK HPA, in order to begin assembling a core capacity in knowledge transfer expertise at the agency design team level.

Training is also a crucial first priority in investing in a revitalized public health system and agency. As an immediate priority, the Panel reiterates the recommendation made in our Initial Report, to rapidly expand the current infection control practitioner training program in Ontario. In conjunction with this, the Panel calls for a review in this Report of the public health capacity at the local level. This review should include a formal process to identify the training needs of existing staff, which will be used to guide an early agenda-setting exercise of required training programs once the Agency is established.

The Panel also suggests that work be immediately initiated to identify the types and format of formal and informal infection control training supports that would be most effective for existing staff in the long-term care, hospital, and other sectors. Clearly, the work should include a multi-year plan to improve access to both formal and informal training using creative approaches such as peer-based mentoring, CD-ROMs, e-training, etc.

v) Communications

There are clearly interim steps that can begin immediately through the Transition Team. These steps would include:

- identifying and costing the IT supports and infrastructures that need to be in place centrally at the Agency to support internal as well as external communications;
- bringing the appropriate IT expertise along with communication expertise to assist in beginning to design the communications infrastructure;
- beginning to draft protocols and appropriate risk and crisis communications plans; and,
- beginning the process of MOU development between the Ministry, EMO and the Agency.

Furthermore, it will be important to draw from the experiences of other organizations and jurisdictions concerning risk communications. For example, Health Canada has proposed to undertake a review of its risk communications activities during SARS. The CDC has undertaken a review of communications protocols and approaches as well as re-organized its communications activities to better support emergency situations. There have also been a number of research endeavours and a series of publications regarding best practices in risk and crisis communications, not only from the SARS experience, but also from anthrax.[29] Both the Agency and the Ministry could benefit from these experiences to support their respective communications mandates.

Division of Responsibilities between the Agency and the Ministry

The Panel believes that there will still be an ongoing need at the Ministry level to have the receptor capacity to interpret and analyze the information and advice provided by the Agency. If the central capacity is not in place at the Ministry to assess and effectively receive the advice and information provided by the Agency and to take appropriate steps to translate the evidence into policy, the overall usefulness of the agency model will be diminished. Therefore, even with an agency, there is still a strong need to have individuals with epidemiological, surveillance, and public health analytical and scientific skills at the Public Health Division. The intent here is not to duplicate but to ensure that information generated is received appropriately.

Given the list of success factors, core functional areas and staged implementation above, the table below highlights the Ministry's main program area responsibilities for public health as vis-à-vis those proposed for the Agency.

Table 3: Overview of Proposed Public Health Activities between Ministry‡ and the Agency

Program Area	Ministry Responsibility	Agency Responsibility
Policy development	• Lead responsibility.	• Provide technical and scientific advice, as requested and appropriate, to Chief Medical Officer of Health.
Development of program guidelines, protocols and standards	• Overall responsibility. • May delegate specific responsibilities for development of guidelines, protocols, and standards to the Agency.	• Provide technical and scientific advice. • Specific responsibilities for development of guidelines, protocols, and standards as delegated by the Ministry.
Enforcement of guidelines, protocols and standards	• Lead responsibility.	• May provide assistance in the development of templates and tools to assist with compliance and enforcement of guidelines, protocols and standards. • Lead responsibility remains at Ministerial level.
Network of expertise	• Ongoing liaison and collaborative arrangements with various experts to support overall mandate as needed.	• Develop a network of expertise through partnerships with research, academia and health care institutions (i.e., cross appointments, joint research) to complement the skill sets available within or affiliated with the Agency.
Research development, support, dissemination and knowledge transfer, including tools (best practices, standards and guidelines) for the field	• **Short-term**: Set broad public health research agenda. Continue to support research. Lead responsibility for dissemination and knowledge transfer of broad public health research. • **Long-term:** Lead responsibility for coordinating public health research with other health research within/ supported by the Ministry.	• **Short-term:** Provide technical and scientific advice on broad public health research agenda. Set communicable and infectious diseases research agenda and support it. Lead responsibility for its dissemination and knowledge transfer. • **Long-term:** Lead responsibility for setting public health research agenda and supporting it. Lead responsibility for dissemination and knowledge transfer.

‡ It is understood that the Ministry may enter into collaborative arrangements and/or may delegate authority to other agencies/bodies to fulfill its responsibilities

Program Area	Ministry Responsibility	Agency Responsibility
Surveillance and epidemiology	• **Short-term**: Lead responsibility for non-communicable disease surveillance and epidemiology (including technical advice, trend analysis and knowledge dissemination). • **Long-term**: Support, contribute and monitor data and analyses.	• **Short-term**: Lead responsibility for communicable and infectious diseases surveillance and epidemiology (including linked and technological advanced surveillance system, strengthening surveillance capacity, trend analysis (including international), technical advice and field support, and knowledge dissemination) through OPHIS. • **Long-term**: Lead responsibility for coordination, monitoring and dissemination of surveillance and epidemiological information.
Public health human resource planning, assessment and training	• Overall responsibility for public health human resource strategy (planning, assessment and training).	• Provide technical advice to the Ministry on public health human resource planning. • Lead responsibility for surveying and reporting on public health training gaps as well as identifying solutions. • Lead responsibility for brokering access to and partnering with other agencies to provide targeted training in specific areas (i.e., epidemiology, facility-based infection control).
Public Health Laboratory	• Lead responsibility for linkages with private laboratories. • **Short-term**: continued management of public health laboratory system, increasing role of Public Health Division. • **Long-term**: transfer of responsibility for management of the public health laboratories through coordination with Agency.	• May provide assistance in the development of templates and tools to assist with compliance and enforcement of guidelines, protocols and standards. • Lead responsibility remains at Ministerial level.

Emergency preparedness support and measures	• Lead responsibility along with other relevant Governmental departments.	• Lead responsibility for providing technical and scientific advice.
		• Lead responsibility upon request (CMOH, field) to:
		    • Support with risk assessment.
		    • Provide on-site field support (including surge capacity).
		• Upon direction of CMOH issue alerts via PHAN.

Table 3: Overview of Proposed Public Health Activities between Ministry‡ and the Agency, cont'd

Program Area	Ministry Responsibility	Agency Responsibility
Communication	• Lead responsibility for general public health communication to practitioners, public and media. • During a crisis/emergency, the Ministry may delegate specific responsibilities to the Agency.	• Lead responsibility for risk communication support to Ministry and practitioners (RCN). • Upon direction from the Ministry, the Agency may take on specific communication responsibilities.
Relationship to Public Health Units	• Continue with lead responsibility for funding and overall program management.	• Provide specialized technical and resource support to the field upon request.

Recommendations

Agency Structure and Mandate

2. The Ministry should proceed with the establishment of an Ontario Health Protection and Promotion Agency that will be established as an appropriately legislatively authorized Agency of the Ministry of Health and Long-Term Care with the following mandate:

    - to promote and protect the health of the people of Ontario, by generating timely and accurate scientific, laboratory, and epidemiological services and providing expert advice, and support on measures to improve the health of Ontarians; and

    - to translate evidence and research into practical and effective assistance, tools, advice and support to healthcare providers in Ontario.

3. The Ontario Health Protection and Promotion Agency should report to the CMOH who shall set strategic direction and also sit as an ex-officio member of the Agency's Board. A Chief Executive Officer, reporting to the CMOH, shall be appointed to provide scientific direction and run the Agency on a day-to-day basis.

Core Functions

4. The core functions of the Ontario Health Protection and Promotion Agency, as outlined in the Report, should encompass:

    a. Communicable disease and infection control
    b. Public Health Laboratory
    c. Emergency preparedness and support
    d. Health promotion and injury prevention*
    e. Research/knowledge transfer
    f. Epi Centre and surveillance
    g. Library services and supports
    h. Communications

    * A full plan for appropriate incorporation should be brought forward by the Agency in Year 3 of operations.

5. The Central Public Health Laboratory should be co-located with the proposed Ontario Health Protection and Promotion Agency, and to the extent possible, examine appropriate partnership opportunities among the Central Public Health Laboratory and appropriate academic health sciences centres while retaining the organizational integrity of the Central PHL. These opportunities could range from formalized agreements on surge capacity to potential collaboration on a broader scale.

6. The Ministry should conduct a review of the Public Health Research, Education and Development Program (PHRED) with the potential to expand both the research and training components.

7. Within three years of its establishment, the progress of the Ontario Health Protection and Promotion Agency should be externally evaluated.

Key Success Factors

8. The Ontario Health Protection and Promotion Agency should be based on the following key success factors as outlined in the Report:
   - transparency
   - accountability
   - anchoring a multi-disciplinary team of experts
   - integrity and credibility
   - cross-sectoral support
   - partnerships
   - resource and service culture

9. The Ontario Health Protection and Promotion Agency should be directed to prepare or assist in the preparation of annual reports. These include:
   - Report on the Health of Ontarians (potentially bi-annually)
   - Public Health Performance Report
   - audit report
   - Agency performance plan
   - infection control status reports

   These reports should be released publicly within 30 days of providing them to the Chief Medical Officer of Health.

Agency Governing Board

12. A formal board structure should be adopted to oversee the financial and operational objectives of the Ontario Health Protection and Promotion Agency. Memberships should reflect a suitable breadth of skills and representation. Core membership of the board should include at minimum, expert representation in the following areas:
    - laboratory
    - hospital sector
    - community provider
    - governance experience
    - public health
    - cross-appointment with federal government

    In addition, a minimum of one seat should be available for a public representative. Final board member determination should be made by the Minister of Health and Long-term Care, solely from a list of potential board members nominated or submitted through a transparent nomination process finalized by an external expert body. Members of the board should serve for fixed but staggered terms and be appointed by Order-in-Council.

    The first chair of the board shall be appointed by the Minister of Health and Long-Term Care on recommendation of the Chief Medical Officer of Health for a fixed term of up to five years.

Agency Founding Legislation

13. Ontario should develop founding legislation for the Ontario Health Protection and Promotion Agency and a detailed Memorandum of Understanding outlining the linkages to the Ministry, Emergency Management Ontario, and other relevant partners that shall at a minimum:

    - Entrench the role and structure of the proposed Ontario Health Protection and Promotion Agency including appropriate safeguards to ensure integrity and authority to ensure research products and reports are publicly released within a maximum of 30 days of being presented to the Chief Medical Officer of Health in the event that they have note otherwise been made public.

    - Provide the Ontario Health Protection and Promotion Agency with the appropriate legal authority to collect, use, and disclose personal health information necessary for the Agency to perform the duties required to fulfill its mandate.

Executive Summary and Recommendations

Review of Initial Report

Introduction to Final Report

Chapter One: Agency Design

Chapter Two: Communicable Disease and Infection Control

Chapter Three: Point of Care

Chapter Four: Plan for Action

Appendices

Glossary

- Entrench the requirement for the Ontario Health Protection and Promotion Agency to produce and publicly disseminate an annual agency performance plan articulating goals and performance measures and progress made on an annual basis.

- Require the Ontario Health Protection and Promotion Agency to produce an annual audit that shall be tabled by the Minister at the earliest and appropriate time and subsequently with the Legislature.

Staged Implementation

14. Initial functions of the Ontario Health Protection and Promotion Agency should be implemented as outlined in the staged implementation section of the Report. These areas of focus include:
    - surveillance coordination and strategic planning
    - epidemiological analysis
    - public health laboratory
    - research and knowledge transfer
    - communications

15. The following interim steps should be taken in preparation for the transition of central public health laboratory capacity to the Ontario Health Protection and Promotion Agency:

    - The Ministry's Public Health Division should immediately hire dedicated laboratory liaison staff within the Division to work directly with the Central Public Health Laboratory to formalize and build improved linkages between the laboratory component and the surveillance and epidemiology components currently housed within the Ministry.

    - At the Central Public Health Laboratory level, senior medical leadership, at the M.D. or PhD level, should be recruited. A formal liaison function should be established to liaise with the Public Health Division.

    - In addition to the need for securing a minimum of two senior medical microbiologists and medical director (as identified in the Panel's Initial Report), the Ministry should commit to adding an additional two medical microbiologist positions (for a total of four new positions) within the next 12 months.

    - A video-conferencing link should be implemented between the Public Health Division in the Ministry and the Central Public Health Laboratory.

- A joint planning body should be established between the Public Health Division and Laboratories Branch within the Ministry, drawing on appropriate external expertise as required.

- A formal operational review of the Public Health Laboratory system should be undertaken focusing primarily on:

  a. identifying and defining the core testing services and mechanisms required to focus and tailor the testing of the Public Health Laboratory system to those of core Public Health Laboratory importance;

  b. determining what functional and procedural enhancements are required to ensure that the Public Health Laboratory system is able to perform at optimum level during both outbreak and non-outbreak situations. Components that should be examined include the need for technology supports, business processes and medium and long-term medical and scientific capacity requirements.

Independence of Chief Medical Officer of Health

17. The *Health Protection and Promotion Act* should be amended to provide the Chief Medical Officer of Health with the following protections:

    a. "The authority for the Chief Medical Officer of Health to issue public comment, including comment to the Legislature where required, without prior authorization by the Minister but where in the opinion of the Chief Medical Officer of Health, public health urgency requires action."

    b. "The authority for the Chief Medical Officer of Health to issue such research or reports, which in the opinion of the Chief Medical Officer of Health are pertinent to promoting awareness of issues pertaining to ongoing or emergent threats to the health of Ontarians and/or the capacity of the province to respond to such threats. Outside of cases of health urgency, the Minister shall be provided by the Chief Medical Officer of Health with a review period of not more than thirty days of such material prior to public release."

Public Health Unit Level

22. The Ministry should commission a review of existing local Public Health Units. The review should incorporate expert input, and comparisons to appropriate jurisdictions to:

    - determine the required core capacities to be available at the health unit level, based upon core geographic, health status, health need, cultural mix, and core health determinants;

    - identify key operational, systemic, and governance barriers that contribute to or may impede the successful functioning of local health units; and,

    - recommend appropriate models of health unit consolidation where such consolidation is rational based upon the evidence generated above and would contribute to strengthening local public health resources.

24. As part of the review of the *Mandatory Health Programs and Services Guidelines* for public health, it is recommended that consideration be given to the inclusion of public health risk communications as one of the program standards.

Graduated Response

62. Upon completion of the legislative review, the Ministry should develop and implement heightened alert schemes for public health emergencies utilizing a range of methods as appropriate.

Communications

70. As part of the Ontario Health Protection and Promotion Agency, a Public Health Alert Network (PHAN) should be established and maintained to issue different types of health messages (alert, advisory, update) to key stakeholders based on agreed protocols. The Ontario Health Protection and Promotion Agency would activate PHAN on the direction of the Chief Medical Officer of Health as a means of supporting crisis and emergency response as well as preparedness at the local and provincial levels.

73. The Ontario Health Protection and Promotion Agency should provide risk communications support and advice to the Ministry, Public Health Units, and other local healthcare providers and organizations including the Regional Communicable Disease and Infection Control Networks. To this end, the Ontario Health Protection and Promotion Agency should:

- support the Ministry of Health and Long-Term Care by providing technical and scientific advice regarding risk communications in general and with respect to specific topics or issues; and,
- establish and maintain a Risk Communications Network with the aim of increasing practitioners' (public health and communication) capacity to undertake and evaluate risk communication activities.

81. An ongoing process and mechanism should be developed to disseminate information to stakeholders including surveillance and epidemiological information, research, best practice information, etc. The Ontario Health Protection and Promotion Agency will develop and support an Ontario Public Health Information System to enable this information sharing, with the aim of providing a specific portal to epidemiological and surveillance information as well as with analysis and trend information (including specific reports) to support practitioners and decision-makers.

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Chapter Two: Communicable Disease and Infection Control

Overview

When SARS first hit Ontario, the experience highlighted the marked absence of a fully operational, standing provincial expert body to provide the necessary scientific capacity required in a provincial health emergency. This left the Ontario SARS Scientific Advisory Committee to serve this function under extreme and emergent circumstances.

The Panel urges the Ministry to proceed to immediately establish a Provincial Communicable Disease Committee (PCDC). It is envisioned that PCDC would act as the central body to establish, review, advise, and/or disseminate infection control standards and guidelines for healthcare providers in Ontario. The Panel also foresees that PCDC would produce consensus documents on best practices in infection control for Ontario with a view to adapting them to each sector in the healthcare system.

The Panel also calls for enhanced regional coordination, consistency, and support for communicable disease and infection control activities. To this end, the Panel supports the development of formal and resourced Regional Communicable Disease and Infection Control Networks (RCDICNs). The regional networks will promote greater consistency, focus, and structure to overall infection control and communicable disease responses, with implementation to commence immediately. It is proposed that the regional networks serve as the link with sectors involved in infection control and communicable disease control and ultimately link to a Department of Communicable Disease and Infection Control at the proposed Agency.

Further, the Panel recommends as an immediate priority enhanced funding for infection control training. In regard to facility design, it is recommended that a facility remediation fund be established to support new guidelines and standards related to facility design and infection control.

Primary Anticipated Costs

- Annualized cost of operating the Provincial Communicable Disease Committee is $0.75m.

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- Anticipated costs of establishing the Regional Communicable Disease and Infection Control Networks province-wide include investments of $5m in Year 1, $10m in Year 2, $15m in Year 3, to be followed by an ongoing commitment of $17m annually.

- Annualized operating costs for providing infection control training are $5m beginning in Year 3 with an initial investment of $1.5m in Year 1 and $2.5m in Year 2.

- Targeted infection control program funding for hospitals and long-term care facilities to be annualized at $15m by Year 3.

- Anticipated cost of facility remediation is $70m over three years beginning with an initial allocation of $10m in Year 2.

Introduction

Infection control activities are aimed both at preventing and controlling the spread of infectious diseases. Such diseases do not respect physical or geographic boundaries and travel in concert with the movement of people or animals. Further, our modern way of life has had an unforeseen impact on the emergence and spread of previously undiagnosed or re-emerging infectious diseases. Such things as increased international travel, changed agricultural practices, urbanization and climate change have led to the spread of diseases such as SARS, HIV, and West Nile virus.[1] This is coupled with a disturbing increase in the number and prevalence of antibiotic-resistant organisms, which has eroded our confidence in being able to control infectious diseases easily with medication.

Despite the significant breadth and mobility of communicable diseases, there has never been a coordinated approach to infection control in Ontario, similar to many other jurisdictions. These are delineated by very physical boundaries, with individual facilities having in place differing programs for infection control. Across Ontario, some facilities have highly developed infection control programs, while others have rudimentary programs or, worse, none at all. Further still, no single set of standards has been adopted in Ontario to guide the development and implementation of infection control programs and measures across all facilities and organizations. As well, there have been very few formal processes in place to support acute care and public health professionals collaborating on infection control issues. While we have federally developed infection control guidelines, their application is highly variable across Canada and Ontario.

This was largely how infection control was structured when SARS struck, resulting in inconsistent and isolated approaches to containing the disease – what was termed by the National Advisory Committee on SARS and Public Health as isolated pockets of "valiant effort."[2] It is a testament to the efforts of healthcare workers that, despite such limitations, the outbreak was contained.

In many ways, the inconsistent approaches again reflect the silo dilemma that a public health agency and the development of networks will need to address and overcome – this will be further discussed in this chapter.

In an era of rapid transfer of patients between facilities and the community, infection control must be coordinated across all areas of the healthcare system and be linked via uniform standards and guidelines. The question therefore becomes one of how to ensure coordination and consistency in infection control across Ontario.

1. First Attempts Post-SARS

In the absence of uniform provincial standards for infection control, adequate numbers of trained infection control professionals, or networks to facilitate exchange of infection control resources and expertise, a number of grassroots initiatives have been initiated formally and informally post-SARS. In several locations, institutions without any formal infection control programs or with 'incomplete' programs have looked to those with a functioning program in place for guidance and support. Facilities that cannot afford to employ a full-time infection control practitioner are beginning to explore the option of sharing the expense, and thereby the expertise, of one full-time equivalent with similarly positioned facilities. The idea of setting up formal agreements among facilities and organizations to provide infection control services has been floated.

On a more formal basis, certain Ontario regions have begun to develop networks for infection control. These will be discussed in greater detail in the second part of this chapter. Such networks are a new concept in Ontario and indeed in many regions of Canada. In provinces that deliver healthcare services through a regionalized model, infection control services have also been provided regionally in certain areas, thereby effectively creating networks on a regional basis. However, Ontario's healthcare system does not operate within a regionalized framework at present and the networks must effectively be built from the ground up.

2. Examples of Health Networks in Ontario

The concept of health networks that function on a regional level is not new to Ontario. Over the course of the past ten to fifteen years, a number of networks directed to specific medical conditions have been created in the province. These arose as a result of the need to improve the efficiency and quality of delivery of certain healthcare services, including patient access. Aspects of three of these networks, which are relative 'success stories', are outlined below. These are not intended to be indicative of how potential regional networks for infection control should be modeled, but may provide tangible examples of what has worked in the past.

A. *Cardiac Care Network*[3]

The Cardiac Care Network (CCN) has a mandate to coordinate the provision of advanced cardiac care services and to advise the Ministry in relation to these services. CCN has recently been incorporated, and currently has a number of roles including:

- collecting, managing, analyzing, and interpreting data using standardized cardiac definitions and databases;
- reporting and communicating data and information on the functioning of the cardiac care system to both providers and consumers;
- monitoring the functioning of elements of the cardiac care system;
- developing guidelines and advice based upon best evidence and through consensus panels of experts;
- assisting providers in coordinating access to cardiac care; and,
- advising the Ministry on system design, resource allocation, and system planning.

The CCN also works in partnership with the Institute for Clinical Evaluative Sciences (ICES).

CCN is independently funded as a Priority Program by the Ministry, on the basis of an annual operating plan that is approved together with an annual budget. CCN membership is comprised of 17 Ontario hospitals that perform cardiac catheterizations, angioplasty, or surgery and which are engaged in formal participation agreements. Also included are independent researchers, regional coordinators, health service professionals, provincial office staff, and Ministry representatives. Housed within each of the 17 hospitals is a regional cardiac care coordinator together with dedicated administrative support. The coordinators are not employed by CCN and therefore must report to their home hospital; however, functionally they are also accountable to the Chief Executive Officer of CCN.

Key factors for network success that have been identified as a result of the CCN experience include:

- a clear purpose that establishes the boundaries of the mandate of the network;
- clear priorities together with realistic timeframes;
- clinical leadership and partnership;
- the capacity for information/data collection and sharing;
- dedicated funding; and,
- a mechanism to keep the Ministry apprised of network activities.

B. Cancer Care Ontario[4]

Cancer Care Ontario (CCO) has a mandate to provide strategic direction and leadership for all components of cancer care in Ontario, and to develop and promote adherence to standards and guidelines both provincially and regionally. CCO is a scheduled provincial agency governed by its own legislation, the *Cancer Act.*[5]

As part of its complex committee structure, CCO has established a series of regional committees. These are responsible for the coordination of cancer care services through the development of regional plans for the delivery of such services, for the promotion of standards and guidelines on a regional basis, and for the promotion of patient access. These duties are carried out through affiliation agreements with organizations and networks of regional providers. The membership of the regional committees is broad-based and includes stakeholders providing cancer care within the region. The roles of the regional committees include:

- monitoring regional compliance with provincial standards and guidelines;
- receiving and reviewing data to provide a framework for review of quality of care;
- evaluating performance based upon indicators to be developed provincially and regionally;
- monitoring and advising on opportunities to improve system performance;
- participating in planning for the region; and,
- reporting to the public and CCO on a regular basis using a provincial framework for reporting.

Similarly to CCN, the CCO works in partnership with ICES.

As one of its programs, CCO has developed the Program in Evidence-Based Care in order to develop, disseminate, and evaluate evidence-based care information for patients, families, and healthcare providers. This includes practice guidelines for professionals.

C. Coordinated Stroke Strategy[6]

The Coordinated Stroke Strategy (CSS) is a joint initiative of the Ministry and the Heart and Stroke Foundation of Ontario, collectively known as the Joint Stroke Strategy Working Group. Its mandate is to create an integrated and evidence-based province-wide stroke strategy, delivered on a regional basis.

Membership in the CSS is comprised of nine designated regional stroke centres, 15 designated district stroke centres and 13 secondary prevention clinics, all of which are committed to the delivery of stroke care and to supporting training for providers. Each regional and district centre has a full-time regional coordinator funded through the Ministry. In addition, regional centres are funded for a part-time medical director. Other dedicated resources include on-call fees and nurses for each stroke centre, and funding for each secondary prevention clinic.

CSS works actively to develop and implement best practice guidelines that are evidence-based, including an educational framework for health professionals. In addition, CSS monitors the benefits of these guidelines in relation to stroke recognition, management, and outcomes. It has developed a comprehensive stroke database to support its monitoring and evaluation roles.

Key factors for network success that have been identified through the CSS experience include:

- establishing clear goals that are based upon evidence;
- collaboration between the regions;
- dedicated regional resources; and,
- the ability to collect data and transfer knowledge.

D. What Have We Learned from These Network Initiatives?

From the preceding examples, a number of key factors for success emerge, as follows:

1. The ability to generate useful common data that can demonstrate the effectiveness of programs and indicate trends.
2. The establishment of a funded coordinator to support the activities of the network.
3. A link to a central body that facilitates standardization and produces evidence-based direction.
4. A link with research capability.
5. The direct involvement of peer leaders.
6. A clear focus on a specific healthcare issue or service area with measurable outcomes.

Where to Go from Here?

The Initial Report recommended establishing an infection control committee to develop comprehensive provincial infection control standards, and recommended developing Regional Infection Control Networks. Since the release of the Initial Report, the Panel has had a number of meetings and discussions with key experts in infection control and communicable disease, which have helped to inform the further elaboration on these two recommendations. In addition, deliberations resulting from these discussions have led to refinement in the naming of both the committee and networks referred to in the Initial Report, namely to the Provincial Communicable Disease Committee (PCDC) and Regional Communicable Disease and Infection Control Networks (RCDICNs) respectively.

Ontario needs a single authority on all infection control and communicable disease issues in order to ensure cohesion and continuity throughout the province. This is a role to be filled ultimately by a Department of Communicable Disease and Infection Control within the new Ontario Health Protection and Promotion Agency.

It will, however, take some years before a functioning Agency is in place. Yet Ontario cannot afford to wait to embark upon a more unified approach to communicable disease and infection control. As such, and until an Agency is fully operational, a standing PCDC must be struck immediately with an advisory role to the Chief Medical Officer of Health and thereby to the Minister. In addition, a standing PCDC should act both as a standard-setting and an advisory body as part of the Agency once it is established.

A single committee will likely lack the capacity to tackle all of the issues presented to it as part of its mandate. In addition, the membership of PCDC may prove too broad to deal effectively with specific topics. As such, standing subcommittees with narrower mandates may prove necessary, with appropriate cross membership. The Panel feels that the initial priority is to establish a single standing PCDC together with a Provincial Infection Control Subcommittee. Additional subcommittees should evolve to fulfill the complete communicable disease mandate of PCDC, including:

- a Provincial Vaccination Subcommittee
- a Provincial Sexually Transmitted Disease Subcommittee
- a Provincial Bloodborne Pathogens Subcommittee
- other subcommittees as required

For the purposes of this Report, the acronym 'PCDC' encompasses the standing committee as well as its subcommittees.

PCDC will also act as an anchor for the Regional Communicable Disease and Infection Control Networks across Ontario, providing them with evidence-based standards and guidelines, among other things. In turn, the regional networks will also support PCDC by:

- helping to implement standards and guidelines in facilities and organizations within each region;
- coordinating surveillance activities within each region; and,
- providing data and information back to PCDC.

1. A Standing Provincial Communicable Disease Committee

When SARS first hit Ontario, no standing provincial expert body was readily in place to accomplish such things as developing, evaluating, and disseminating standards and guidelines with respect to communicable disease and infection control activities. In the absence of such a body during SARS, the Ontario SARS Scientific Advisory Committee was struck under extreme and emergent circumstances. Its purpose was to serve as the organization responsible for providing scientifically valid advice upon which to base directives for healthcare providers related to the prevention and control of the spread of SARS. With the passing of the SARS crisis, the Science Committee ceased meeting regularly.

In the autumn of 2003, the Infection Control Standards Task Force was created with a finite mandate to recommend provincial baseline infection control and surveillance standards for febrile respiratory illnesses in acute care settings. Subsequently, two other task forces were created to recommend application to non-acute and community settings. The task forces were dissolved after fulfilling their mandates and submitting their final reports to the Ministry.

In early 2004, healthcare providers were again brought together to advise and assist in refining drafts of a pandemic influenza plan for Ontario. And again, no standing body was yet fully in place to address this and other communicable disease and infection control issues on an ongoing basis. Clearly, a vacuum exists that must be filled on a permanent basis.

This is not to say that standing advisory expert bodies have not been created in the past. In 1987, the then Minister of Health established the Advisory Committee on Communicable Diseases (ACCD) to advise him, through the Chief Medical Officer of Health, on provincial policies and programs with respect to communicable diseases. In its initial years, ACCD was regularly utilized as an advisory body, although generally not with respect to facility-based infection control issues. ACCD still exists today; however, the Panel has been told that its potency has been diminished in recent years due to infrequent meetings, resource shortages, and staff changes at the Public Health Division, and a sense among some participants that advice emanating from the Committee was not always heeded by the Ministry.

Membership of ACCD is broad-based, including representatives from the Laboratories Branch of the Ministry, medical microbiology, infectious disease, long-term care, acute care, and academic medicine. The opportunity for representation by professional regulatory bodies and/or associations exists. Secretariat support should be provided through the Public Health Division, although *de facto* this support is reported to have been limited in recent years due to staffing shortages.

Included in the mandate of ACCD are: "to provide advice on specific ongoing and emerging communicable disease issues as they arise," and "to identify to the Ministry needs in the field for provincial guidelines and standards related to the control of communicable diseases."[7] Despite this, for a number of reasons ACCD did not end up playing a prominent role during SARS, although the chair was involved in the emergency response activities.

A. *Mandate of a New Provincial Communicable Disease Committee*

(i) Standards and guidelines

As outlined in the Initial Report, the Panel sees the need for PCDC to act as the central body to establish and/or review and advise on communicable disease and infection control standards and guidelines for healthcare providers in Ontario. As noted in the Initial Report, a number of national and international guidelines reflecting evidence-based best practices in communicable disease and infection control already exist; for example, those developed by Health Canada and by the US CDC. It is not intended that PCDC reinvent the wheel by developing infection control standards and guidelines for Ontario *de novo*. Rather, the Panel foresees the role of PCDC to be one of taking existing guidelines and rendering them relevant and applicable to Ontario – in a word, to 'provincialize' them. Should an issue or area arise for which no guideline has been developed, or to which existing guidelines cannot be applied in a satisfactory manner, PCDC's role would be to establish relevant guidelines and standards using evidence-based principles. A clear example of such an issue or area is facility design as it relates to infection control, and the Ministry and hospital requirements for scientifically based advice as to appropriate versus inappropriate design modifications to enhance infection control. Another is best practices to prevent the spread of methicillin-resistant *Staphylococcus aureus* (MRSA) in hospitals and long-term care facilities.

The Panel foresees that PCDC will also produce consensus documents on best practices in infection control for Ontario, adapted to each sector of the healthcare system. These consensus documents should then be reflected in standards or guidelines to be applied to and utilized by the field. The overarching requirements are clarity, practicality, and usability.

Any standards and guidelines emanating from PCDC must also be sufficiently flexible so as to allow further tailoring at the local level. Specific infection prevention and control standards and guidelines promulgated through PCDC should also have daily relevance and be able to address both baseline or non-outbreak situations, as well as outbreak conditions.

Standards and guidelines are also necessary in relation to the human resources and skills required to establish and run a functional infection control program. These should address the core competencies required, as well as the minimum staffing levels of selected infection control professionals needed on a per-bed basis, either at the facility or regional level.

A related requirement is for standards with respect to the amount and level of training in infection control for healthcare providers, both those actively involved in running infection control programs and those engaged in delivering healthcare services on all levels. As a companion to such standards, PCDC could look to developing standardized training manuals or training checklists, relevant to each sector of the healthcare system and which could be tailored to accommodate the needs of individual facilities and organizations. Such manuals or checklists could be utilized as part of orientation training for new workers and/or as part of continuing education or refresher courses offered to existing staff.

Once standards and guidelines have been developed by PCDC, they must be made readily available to and implemented by healthcare providers. This can be facilitated through the regional networks, as discussed below.

We cannot stress strongly enough the present shortages of resources in infection control, both human and educational. The Initial Report of the Panel recommended that adequate funding be provided to ensure that training in infection control becomes more available and accessible, and that strategies be developed to achieve target ratios for the number of infection control practitioners. In addition, the Panel recommended: the review and updating of standards for infection control continuing education and maintenance of core competencies for all healthcare professionals; and, the definition of core curricular elements of infection control education for all healthcare education programs at the university and college level. Until these needs are addressed, any expectation that standards be fully implemented across the entire healthcare system is rendered more difficult.

Prior to implementation, standards could act as yardsticks against which existing infection control activities and programs are measured, and thereby identifying gaps and resource needs.

Looking forward, once standards are implemented, they could be further used as benchmarks for compliance and quality assurance monitoring. This is consistent with the Initial Report, where a recommendation was made that PCDC develop mechanisms to ensure compliance with infection control standards. Monitoring could be accomplished through something akin to the Hospital Report Card procedure, in addition to exploring what enhanced role the Canadian Council on Health Services Accreditation might be able to play through the accreditation process. The existence of such benchmarks would also increase the utility of data collection analysis, and dissemination in relation to outcomes analysis and cost-benefit analysis.

The Initial Report recommended that PCDC have a role with respect to audits. PCDC could develop self-audit templates based on benchmarks, to be used by healthcare providers. The implementation of these self-audits could be facilitated through the regional networks. Effective self-audit tools have been developed in a number of other areas of hospital operation, and experience shows that these tools could be very useful. Additionally, peer audit systems can be organized through PCDC, whereby one facility or institution either within or outside the same region audits another as against benchmarks. One regional network could also audit another, again utilizing benchmarks set through PCDC.

Finally, any standards and guideline development process adopted by PCDC must be fluid and elastic, such that standards and guidelines are regularly reviewed by PCDC and updated, changed, or rendered obsolete as any emerging evidence dictates.

(ii) Advisory statements

In addition to establishing standards and guidelines for Ontario based on best practices, PCDC should have an information sharing role, such as preparing advisory statements and bulletins for healthcare providers to address new infection control developments or situations of provincial significance as they arise. In addition to making these advisory statements available through the regional networks, they should also be made available on a dedicated PCDC website.

(iii) Model protocols

PCDC could further embark on the development and dissemination of model infection control protocols or programs reflecting best practices, which are flexible enough to be adapted as necessary by individual facilities and organizations that do not have such programs. These models could be developed in partnership with facilities that have functional protocols or programs in place, and could be implemented locally with the assistance of the regional networks.

One of the priority areas of work could include, for example, such measures as re-using medical devices. This is an area in which extensive work has already been done, but where there is still a need for greater access to practical advice and functional model protocols.

(iv) Core indicators

Core indicators, such as the incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) infection, can be useful markers as to the efficacy of infection prevention and control activities and can provide useful information concerning worrisome trends. Currently, there is no Ontario protocol for core indicators like MRSA that takes into account factors such as underlying medical conditions and frequency of hospitalization as risk variables for infection. Other jurisdictions, such as the U.K., have established a national reporting system for MRSA across all acute care facilities. As such, without knowledge of these variables, core indicator data currently submitted to bodies such as the Canadian Nosocomial Infection Surveillance Project (CNISP) may be less useful due to an inability to properly compare data from different sources. This problem cannot be easily solved without better resources and broader involvement.

The Initial Report recommended that the Ministry, together with key stakeholders, develop core indicators for monitoring facility-acquired infections. In keeping with this, PCDC should establish the standard core indicators to be reported by each type of facility across the province. Surveillance for and reporting of these core indicators would be coordinated through the regional networks, and could be reported publicly through vehicles such as Hospital Report Cards. In tandem with this process, PCDC should determine standard definitions of, and surveillance and testing protocols for, these core indicators. This could be accomplished in collaboration with existing bodies such as CNISP, the Canadian Hospital Epidemiology Committee, the Community and Hospital Infection Control Association, as well as the Institute for Clinical Evaluative Sciences.

However, the simple collection of data related to core indicators in and of itself has limited utility unless the data can be utilized as part of a process of continuous quality improvement. The point is not to measure for the sake of measuring, but rather to improve conditions for patients and providers. As such, together with determining and defining these indicators, PCDC should develop protocols for the analysis of data collected in relation to core indicators, and to disseminate the results of this analysis to healthcare providers and the public as one component of a quality assurance program.

(v) Research

The Panel envisages that another role of PCDC is research on infection control issues. At a minimum, PCDC should have an advisory role as to priorities for infection control research in Ontario. Some of these priorities would be informed by feedback from the field through regional networks. As described in Chapter One, the proposed Agency should have a clear research mandate with some level of control over the use of designated research funds. The advisory input of PCDC could be applied to help prioritize the use of these research funds.

In addition, a valuable role for PCDC and the Agency would be to track emergent facility-acquired infectious and emergent or re-emergent communicable diseases on an international level through the appropriate national linkages and research activities.

(vi) Emergency planning

A further role for PCDC should relate to providing strategic advice around potential or actual communicable disease emergencies. The ultimate responsibility for developing emergency response protocols or contingency plans would not fall to PCDC; however, within the scope of expertise of PCDC, its advisory input would be value-added during the planning process. Until the Agency is functional, this input should flow directly to the Chief Medical Officer of Health and thereby to the Ministry. After the creation of the Agency, it should flow both to the Agency and to the Emergency Management Unit within the Ministry.

(vii) Policy

Both before and after the creation of the Agency, PCDC should be able to advise the Ministry in relation to infection prevention policy at the request of the Chief Medical Officer of Health. An example would be the provincial immunization policy and approaches to prioritization based on relative risk and available science, through a Provincial Vaccination Subcommittee.

B. Structure and Governance of a New Provincial Communicable Disease Committee

As noted above, once the Ontario Health Protection and Promotion Agency has been established, PCDC is envisaged as a principal component within the Department of Communicable Disease and Infection Control (DCDIC). Prior to establishing the Agency, PCDC should function as an arms-length advisory body to the Minister with a direct reporting relationship through the Chief Medical Officer of Health. Before the creation of the Agency, all standards, guidelines, advisory statements, and other material produced by PCDC will require ultimate approval by the Chief Medical Officer of Health and thereby the Ministry. Once part of the Agency, PCDC should report to the director of DCDIC.

The chair of PCDC must be seen as independent and credible. Until such time as the Agency is fully functional, the chair should be appointed by the Minister on the recommendation of the Chief Medical Officer of Health through a transparent nomination process. Appointment should be for a fixed term, with reappointment possible if deemed appropriate. Once PCDC is moved into DCDIC (part of OHPPA), its chair should be appointed by the Board of Directors of the Agency for a similarly fixed term.

Core membership of PCDC should represent broad expertise across the healthcare sector, including infection control experts, infectious disease experts, microbiologists, occupational health and safety experts, public health experts, and hospital and field epidemiologists. Delegates from both acute care and long-term care should be included within the core membership. Non-core membership should be extended to the Chief Medical Officer of Health and one or more representatives of the regional networks. Furthermore, liaison memberships or partnerships should be created with professional regulatory bodies and professional associations. The appointment process for core members of PCDC should be the same as that of the chair, as well as allow for staggered terms of appointment.

C. *Relationships of a New Provincial Communicable Disease Committee*

As previously discussed, both before and after the establishment of the Agency in Ontario, PCDC should exist as an arms-length body to the Ministry.

PCDC should also have a level of independence with respect to the communication of any standards, guidelines, or advisory statements it develops, in order to maintain purity of content and avoid perceptions that the Ministry is interfering. After forming the Agency, this can be achieved more formally and clearly through the founding documents or legislation creating the Agency. Until that time, the Chief Medical Officer of Health, to whom PCDC should report in the near term, must be able to communicate these standards, guidelines, and advisory statements independently. As stated in Chapter One, the Panel urges an immediate review of the *Health Protection and Promotion Act*[8] to ensure that this can occur.

The Panel does not envision that PCDC would have a role in implementing and operationalizing standards, guidelines, and advisory statements developed by it. This would be left to healthcare providers themselves, through the regional networks as discussed below. As such, PCDC and ultimately the Agency, must establish formal linkages and communications pathways with the regional networks, in order to disseminate standards, guidelines, analyzed surveillance data, and information. Similarly, through defined linkages and pathways, regional networks must be equipped to provide feedback, information, and data to PCDC and in due course to the Agency. Any such bilateral mechanism to exchange information and communication must integrate with any other communication and information technology supports created as part of the Agency infrastructure.

The Panel also believes that a well-structured relationship to report data and information between each regional network and PCDC is necessary to ensure consistent and predictable exchange of information. The regional coordinator for each network, described in more detail later in this chapter, should be responsible for flowing data and information up to PCDC.

PCDC should also have a formalized line of communication with the existing Centre for Surveillance Coordination and the Centre for Infectious Disease Prevention and Control, currently within the Population and Public Health Branch at Health Canada, or their successor bodies within any proposed federal public health agency.

Executive Summary and Recommendations

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Chapter Four: Plan for Action

Appendices

Glossary

Communication with the Ontario Ministry will occur on an ongoing basis as part of the non-core membership of the Chief Medical Officer of Health on the PCDC.

It is vitally important that PCDC maintain transparency in its functioning. The best way to achieve this in the short- and long-term is to establish a dedicated PCDC webpage, with access by the public as well as healthcare providers. This webpage should become part of an overall Agency website. The webpage should post all approved standards and guidelines as well as those under development or review. In addition, all advisory statements should appear on the site and there should be capacity to handle feedback and questions. The webpage/ website is envisioned as the only conduit through which PCDC will have a direct role *vis-à-vis* healthcare providers and others.

D. What about ACCD?

The question remains as to what should happen with the existing Advisory Committee on Communicable Diseases. A review of its terms of reference and current membership suggests that ACCD should not be disregarded entirely.

This leads to a further question of whether it is reasonable to create a PCDC that would operate concurrently with an ongoing ACCD. The Panel feels that this could result in a duplication of effort and a fragmentation of expertise that is already in short supply. Therefore, the Panel feels that the terms of reference of a newly established PCDC should take into account and incorporate as appropriate the mandate and current membership of ACCD. In turn, ACCD should be dissolved into the new PCDC.

2. Regional Communicable Disease and Infection Control Networks

As previously noted, infection control activities and programs in Ontario currently function in relative isolation, with only partial coordination between various facilities and organizations and limited shared access to expertise. This isolation is rendered all the more problematic because of the severe shortage of healthcare workers adequately trained in infection control practices. The result during the SARS outbreak was a somewhat fragmented approach to infection control, with some facilities having comprehensive infection control measures in place and others having far fewer. Even among those facilities employing more comprehensive measures, there were few pre-existing formal mechanisms to facilitate coordination of efforts and, therefore, unnecessary duplication resulted at a time when resources were stretched to their limits.

In light of these concerns, the report of the National Advisory Committee on SARS and Public Health made the following recommendations:[9]

- Create formal Regional Infectious Disease Networks that can design and oversee the implementation of hospital strategies for responding to outbreaks.
- Ensure each hospital's protocol for outbreak management incorporates an understanding of the interrelationships with local and provincial public health authorities.
- Ensure continuing education for hospital staff to enhance awareness of outbreak/infectious disease issues and institutional/clinical infection control.

The Panel's vision of Regional Communicable Disease and Infection Control Networks encompasses all three of these recommendations, and expands upon them.

The benefits of developing a regional approach to infection control and outbreak management are far reaching. They include:

- allowing for integration of infection control activities across and through all portions of the healthcare system;
- improving communication and sharing of information/data;
- allowing for some level of surge capacity;
- facilitating better access to expertise;
- increasing efficiency of use of scarce infection control resources;
- improving alignment of infection control practices;
- allowing for consistent reporting of core indicators; and,
- facilitating coordinated emergency preparedness and contingency planning for new and re-emerging outbreaks and bioterrorism.

A. Infection Control Network Initiatives Underway in Ontario

Certain regions within Ontario already have initiatives underway to develop networks for infection control. A number of counties in the Ottawa area comprise one such region, which has developed a model for the Champlain Infection Control Network.[10] The model proposes that two structures exist within the network: a representative regional Steering Committee and an Outreach and Consultation Team. The Steering Committee would have a governance role over the Outreach and Consultation Team.

The mandate of the Steering Committee includes: monitoring of infection prevention and control resources and practices; reducing duplication of services and leveraging of existing services; and identifying system gaps. Its membership would encompass acute and long-term care, Public Health Units, Community Care Access Centres, Emergency Health Services and, ultimately, community-based partners.

The Outreach and Consultation Team would act as an expert resource to support healthcare organizations across the region under the management of the Steering Committee. Its membership would include a medical director, infection control practitioners from acute, non-acute and community-based settings, an educator, and microbiology resources, among others.

The roles and responsibilities foreseen for the network take into account the need for:

- streamlined communication processes;
- consistent infection control and outbreak management standards; human resources planning;
- infrastructure considerations such as the physical design of facilities; and,
- emergency preparedness and surge capacity.

The model also anticipates a supportive role for the network in relation to Public Health Units, with respect to surveillance systems for communicable diseases and emergency planning for communicable disease response. Public Health Units would continue to have lead responsibility in relation to the *Mandatory Health Programs and Services Guidelines* set out pursuant to the *Health Protection and Promotion Act.*[11]

The model proposes dedicated funding for certain network resources, namely a director and administrative support. Such dedicated funding and all reporting obligations to the Ministry would flow through the regional academic health sciences centre.

The model is an example of a network that is designed to take into account:

- existing infection control resources and practices within the region;
- the location of the single academic health sciences centre with a critical mass of expertise;
- the location of secondary hospitals;
- patient referral and flow patterns; and,
- the population distribution between urban and rural settings.

A second region working to develop a regional network is situated in southeastern Ontario around Kingston.[12] In this model, a Regional Infection Prevention and Control Committee would act in an advisory capacity with respect to overall infection control direction and outcomes in the region. Membership in this Committee would be derived from network partner facilities. In addition, a Regional Infection Prevention and Control Operations Committee comprising regional infection control practitioners, a regional coordinator, and a medical director would manage day-to-day infection control issues.

Overall, the vision of this model is to create a regional infection control program. Proposed components included in this program are:

- a core regional infection control team to perform the functions of the program
- a regional outbreak team
- communications
- training
- surveillance for core indicators and infections of interest
- alignment of infection control policies and procedures
- professional development and support
- a role in regional contingency planning for outbreaks and bioterrorism

This model similarly proposes dedicated funding for designated network resources.

From the preceding examples, it becomes evident that the regional networks must be built from the ground up and that any attempt by the Panel to be too prescriptive as to the mandate and structure of networks will be ineffective. That said, the Panel believes it is possible to define a set of core elements to be included in constructing all networks across the province.

B. Core Elements for Regional Communicable Disease and Infection Control Networks

(i) Mandate

No two regions in Ontario are identical, whether in their demographic characteristics, geographic distribution of healthcare resources, or risk factors for health, including infectious disease risks. As such, the mandate of the regional networks must be sufficiently flexible so as to accommodate regional differences and variations. In addition, regional networks will not supplant the strong need to improve existing facility or organization-based infection control programs, or ultimately act as a third-party provider of infection control programs to those facilities without a comprehensive program in place.

First and foremost, the regional networks should serve a coordination function for infection control within the region. In so doing, they would act as the communicator to member healthcare providers of all standards, guidelines and advisory statements promulgated by the standing provincial PCDC.

More than simply communicating standards and guidelines *de facto* to the field, the regional networks should play a pivotal role in implementing and operationalizing these on a regional basis, taking into account and making necessary adaptations to accommodate regional variations. In this way, the regional networks could ensure a common approach to employing best practices, as these are set out in the standards and guidelines.

The regional networks could also act as communicators back to PCDC, and ultimately the Agency, with respect to such things as data, anecdotal trends, gaps in research, and other areas of concern in the field. Effectively, they would act as the infection control 'voice' for frontline healthcare providers within the regions. Data related to surveillance activities, quality assurance, and compliance monitoring should be reported back to PCDC.

In order to maximize information sharing and facilitate the implementation of standardized policies and procedures, the regional networks should also communicate between themselves on a collective basis. Experience with the Coordinated Stroke Strategy clearly demonstrates the value of drawing together network leaders and key participants to ensure that best practices are shared, and that emerging networks can gain advice and support from networks with more extensive experience. This approach will also assist in problem solving at the regional level.

One of the primary steps to be taken by the regional networks should be a mapping of existing infection control resources and practices within the region, ideally against standards set by PCDC if such are available at the time. In this way, each region can determine the availability of core resources and the gaps that must be filled in order to ensure that infection control activities are properly supported within that region. This information can be fed back to the Ministry, and ultimately the Agency, through PCDC and can be shared with other regional networks. Once gaps have been identified and compared to currently available resources, opportunities may arise to fill these in the shorter term either by: reallocating resources within the region, such that centres with sufficient resources would act as backup to those without; or by accessing expertise in neighbouring regions until the gap can be filled utilizing the region's own resources. Any mapping of infection control resources should acknowledge the review of public health capacity called for in Chapter One, and where applicable align any requirements for expertise as they relate to infection control.

A mapping exercise would also provide useful baseline information for the development of region-wide protocols and facility-to-facility agreements related to surge capacity and contingency planning for infectious disease emergencies. This process is envisaged to include providing infectious disease teams to aid facilities severely affected by such emergencies, ensuring adequate laboratory capacity during a crisis, and employee sharing agreements. Mapping would also yield information valuable to prioritizing the region's infection control resources and activities.

The regional networks would also have responsibility for coordinating the surveillance of certain infections, including the core indicators determined by PCDC as discussed above. In addition, the regional networks would support Public Health Units in their surveillance of Communicable and Reportable Diseases as mandated under the *Health Protection and Promotion Act.*[13]

The regional networks could also play a supportive and collaborative role with Public Health Units in developing region-wide protocols and agreements for disease-specific outbreak management and contingency planning for communicable disease emergencies.

A further function of the regional networks should be to assist in ensuring accessibility to and availability of training in infection control on a regional basis. This would include implementing any training standards disseminated by PCDC and providing assistance in utilizing standardized training materials or checklists developed by PCDC. In addition, the regional networks should nurture any infection control training initiatives or courses within the region, at the same time working to ensure that these meet any PCDC standards.

Finally, the regional networks could play a role in quality assurance and compliance monitoring by encouraging self-auditing of facilities' infection control practices as measured against benchmarks set through PCDC. This audit information can then be fed back to PCDC for possible use as part of a report card mechanism or other centrally coordinated quality assurance mechanism.

(ii) Dedicated resources, funding, and governance

Existing functional networks in Ontario appear to have common elements, which include a regional coordinator and a medical director. These models clearly illustrate that a resourced coordinator holds a network together over time. Indeed, areas in other provinces that deliver infection control services on a regional basis also uniformly include this element.[14] The coordinator would be a dedicated resource responsible for coordinating and supporting all of the activities of each regional network and acting as the central contact for the flow of all information. This position should be filled by someone with infection control expertise, such as an infection control practitioner. In turn, the regional coordinator would require dedicated administrative or secretariat support.

Looking to the core mandate for the regional networks discussed above, more specific functions of a regional coordinator could include: acting as a communications liaison with other regional networks across the province; communicating standards and guidelines to the field once they have been adapted to suit regional needs and variations; communicating regional data to PCDC/the Agency, to other regional networks and back to the regional healthcare providers.

The Panel also feels that each regional network should have a medical director, ideally with expertise in infectious diseases, infection control, medical microbiology, and epidemiology. These experts are variably known as 'hospital epidemiologists' (particularly in the U.S.), as 'infection control physicians', or as 'medical directors of infection control programs'. Specialists with these qualifications are generally housed in academic health sciences centres or tertiary care hospitals; as such, it would be rational to co-locate other dedicated resources, such as the coordinator and support staff. The medical director would be an expert clinical resource who could be accessed by members of the regional networks. This person should continue to work in the field, with regional network activities being carried out on a part-time basis.

The Panel is mindful of the fact that only a limited number of individuals with the requisite background to act as medical director for a regional network presently exist in Ontario. It is anticipated that regions may naturally form themselves around necessary affiliations with the facilities housing such specialists (see also discussion of network boundaries below). In the absence of such affiliations, the Panel advocates that regions without an appropriate medical director resource form an alliance with a region having such a resource.

Funding for dedicated regional network resources, which include the regional coordinator, the medical director, and any necessary administrative support, should initially flow directly from the Ministry as part of a designated funding envelope for infection control. This targeted funding could be added to the central public health budget, which is probably less subject to unforeseen cost demands than hospital budgets.

Each regional network should also implement a steering committee, with core membership to include representatives from acute care, public health, and key disciplines such as infection control practitioners, infectious disease physicians, microbiology, epidemiology, and occupational health and safety. The choice of key discipline members should reflect long-term care and community interests. Senior management should also be represented.

In addition, non-core membership should include communications specialists and risk management experts, in order to address outbreak management as well as contingency and emergency planning.

The steering committee would act as the governing body for each regional network and ensure that communicable disease and infection control activities are carried out in a consistent and collaborative manner across the region. To this end, the functions of the steering committee in relation to the mandate of the regional networks could include: adapting and implementing infection control standards and guidelines disseminated from PCDC; undertaking mapping of resources and practices within the region; coordinating surveillance activities; supporting infection control training and education within the region, including implementing any relevant standards and guidelines set by PCDC; identifying region-specific issues, trends and gaps; determining infection control priorities for the region; implementing any self-audit initiatives; and, facilitating collaboration in the development and implementation of regional contingency plans.

The work of the steering committee would be supported by the regional coordinator, who would also be a core member of the committee, as would the medical director.

The terms of reference of the steering committee should stipulate that a rotating chair be selected from among the core membership. In addition, the terms should provide for meetings on a regular or as-needed basis.

Beyond a steering committee, the Panel feels that additional or sub-committees, or such things as outreach teams, should be left to develop organically within each region based on the demographics, hospital distribution, and geographic breadth, among other things.

The Panel recognizes that regional network leadership is an issue that needs cooperation and collaboration among healthcare providers, particularly in the initial stages between acute care and public health.

The Panel also acknowledges and fully supports all collaborative initiatives underway between acute care providers and public health across the province.

In relation to developing the regional networks, the Initial Report of the Panel recommended a joint lead arrangement between a designated hospital and Public Health Unit. The involvement of both of these key players will also be required through the implementation process for each regional network, each having specific roles within the networks. In order to avoid confusion and facilitate the flow of funding from a dedicated envelope, one lead organization will be required on an operational level to house the regional network resources, such as the regional coordinator and medical director. As discussed above, these resources are traditionally situated, along with core expertise in infection control, in an academic health sciences centre or tertiary care hospital. Therefore, this should be the lead organization.

Further, dedicated funding would be relatively easy to flow through an acute care facility. It could prove more difficult to flow funds through a Public Health Unit. Given the current municipal role in the funding as well as under-resourcing of Public Health Units, there may be a risk that dedicated resources are squeezed to the point that these resources are lost to other priorities.

Public Health Units would retain accountability with respect to those matters that clearly fall within their legislated mandate, such as outbreak response plans, surveillance, investigation, response, and other responsibilities related to Communicable and Reportable Diseases as defined under the *Health Protection and Promotion Act*. In this context, the regional networks would have a supportive and collaborative function; the role of Public Health Units should be commonly understood and recognized by all regional network member facilities and organizations. Where the role of Public Health Units is not well delineated, consideration must be given to reviewing and updating the existing *Mandatory Health Programs and Services Guidelines*, as discussed in Chapter One of this Report.

Tied into the flow of funding, the staffing resources should be accountable to the acute care lead organization for completing the work or responsibilities assigned to them by the network.

In addition to these accountability requirements, each regional network should also submit reports to PCDC, and also to DCDIC (within the Agency) concerning such things as surveillance data, resource gaps, and self-audits. The regional coordinator should be responsible for providing such reports. The reporting process should be formalized and regular. The Panel foresees at least two streams of surveillance data ultimately flowing to the Agency:

1. Data related to Communicable and Reportable Diseases would logically continue to flow directly to the Chief Medical Officer of Health as part of his or her authority under that legislation. The Chief Medical Officer of Health can then delegate authority to the Epi Centre/EAC within the Agency to receive this data concurrently.

2. Core indicator data can flow from regional network members through the networks directly to the Epi Centre/EAC for analysis. Existing data transfer between individual facilities and bodies such as the Canadian Institute for Health Information (CIHI) and the Institute for Clinical Evaluative Sciences (ICES) would be preserved, with necessary links among the Epi Centre/EAC and these organizations as required for project-specific activities.

Ultimately, and as a possible long-term goal, the potential inclusion of designated nosocomial infections as Communicable and Reportable Diseases under the *Health Protection and Promotion Act* could be explored.

(iii) Infrastructure

In order to facilitate the development of functional regional networks that are able to properly fulfill their mandate, a number of infrastructure elements must be in place.

First, an integrated information technology system must be created that links all regional network members in the region together and with the regional coordinator, PCDC, and the Ministry in the short-term, plus the Agency in the longer-term. Ideally this platform should also be able to link all regional networks across the province. This venture need not be a hugely complex or costly undertaking and could be as simple as a dedicated website with pass-code access. This information technology system should interface with any other system developed to support a provincial infectious disease surveillance plan, as recommended in the Panel's Initial Report, as well as with communications systems established within the Agency.

Second, organizations may make contributions in kind and provide physical space to house regional network resources within the lead organization.

Finally, the appropriate ability to share data must exist. Subject to the requirements of provincial and federal privacy law, RCDICNs must have the ability to share data and information relevant to the incidence of Communicable and Reportable Diseases (as defined under the *Health Protection and Promotion Act*) within the region, particularly in outbreak conditions. This could be addressed at the level of the Ministry through applicable legislative amendment. Alternatively, and in keeping with the current health information privacy bill,[15] it could be managed by executing data-sharing agreements among certain healthcare providers and Public Health Units within each regional network. By this means, data stripped of personal identifiers could be shared, for example, for certain purposes and certain types of diseases.

(iv) Membership

Membership in regional networks should occur at the facility or organization level, and ultimately include hospitals, long-term care facilities, laboratories, Community Care Access Centres, Public Health Units, Community Health Centres, Emergency Health Services, and other community providers such as family physicians and dentists. A lead contact person from each regional network member should be designated to link to and interface with the regional coordinator, steering committee, or medical director, as appropriate. This could be the person responsible for the regional network member's infection control program or a senior administrator.

Membership in the regional networks is distinguished from membership on the steering committee. The latter should be based on key disciplines and not be structured to represent each regional network member facility and organization *per se*, except for the acute care lead organization and Public Health Unit(s). The key discipline membership on the steering committee should be selected to represent the interests of other areas of the healthcare sector, but members should not speak for home facility or organization concerns on this committee. Rather, facility- and organization-specific interests should be raised as part of membership in the regional network, not the steering committee.

(v) Relationships

Aside from any reporting and accountability relationships already discussed, each regional network must have a clear mechanism for the regular exchange of information and data with PCDC. The key point person for contact and bi-directional exchange of information with PCDC should be the regional coordinator.

Networks must also be linked to one another. This could be accomplished through regular meetings of all regional coordinators and medical directors, perhaps as a formal Regional Coordination Committee. The chair of this Committee should be a non-core member of PCDC. As discussed previously, all regional coordinators should be linked via a compatible information technology infrastructure, in order to ensure timely and accurate exchange of information. As part of this, each regional network could establish a limited access, password-protected website that would permit access to data, information concerning outbreaks, or educational initiatives.

Included at the end of this chapter is a schematic outlining the structure, governance and relationships of proposed Regional Communicable Disease and Infection Control Networks.

C. Network Boundaries

The issue of how to determine the boundaries among the regional networks involves considering many variables. Before embarking on a discussion of which variables the Panel feels are essential in defining these boundaries, it is important to stress that creating divergent boundaries between such things as Public Health Units, Ministry regional offices, and regional networks should be avoided wherever possible. Further, the Panel is not seeking to recommend *de facto* where those boundaries should lie, but rather provide its assessment as to the prioritization of the multiple factors that could impact them.

The Panel feels that the most significant factors to be considered in establishing the regional network boundaries are: (a) the location and extent of core expertise, or core capacity, in infection control; (b) rational patterns of patient movement; and (c) alignment with other key health service areas.

The presently limited supply of core expertise in infection control and communicable disease is envisioned as becoming the nucleus for each regional network. As such, a review of the number, distribution, and location of professionals with this expertise is necessary to map the distribution of core capacity across the province, which in turn would determine where the nucleus of each regional network should rationally lie.

Additional significant variables to be taken into account when determining regional network boundaries are patient flow and referral patterns, as infection control activities should 'follow' the patient through the various parts of the healthcare system.

The Panel further believes that the breadth of the regional networks *vis-à-vis* the core capacity available to act as a nucleus should be determined by the demographics to be served, including population and number of in-patient and long-term care beds.

Although the Panel does not feel that geography is the most important variable, it must also be taken into account, particularly in sparsely populated areas of the province where travelling distances may prove to be an obstacle to effective collaboration among regional network members. Here, the Panel sees potential to utilize telemedicine linkages such as the NORTH network (Northern Ontario Remote Telecommunications Health network)[16] In addition, there is the possibility of setting up satellite networks based upon existing geographically based relationships among facilities and organizations. These satellite networks could have their own resources, such as a coordinator and support staff, to manage infection control issues within the satellite region. These resources would then have a direct link to the regional network nucleus with its core expertise, regional coordinator, medical director, and additional supports.

Applying the variables of core capacity, patient referral and flow, and demographics discussed above to larger urban areas with numerous academic health sciences centres may result in the development of multiple regional networks within a smaller geographic area. However, the Panel feels that this might be a desirable outcome, as it could result in efficient utilization of the high density of core expertise within such urban areas. If regional networks in these areas develop primarily on the basis of geography, competition for lead organization status among the various facilities with similar levels of core expertise may result. If core expertise, not geography, is the main determinant of the regional network boundaries, this competition could be minimized and skills utilized resourcefully.

Each academic health sciences centre with the requisite expertise could then become a lead organization for a regional network defined more by core capacity weighed against population and number of beds than by geography. In addition, existing linkages among facilities would be preserved; these linkages may not be primarily defined by geography in larger urban centres but by such things as referral patterns and admitting privileges of physicians. Cohesiveness between multiple regional networks functioning within a smaller geographic area could be maintained through partnership agreements among the lead organizations or by establishing an overarching cooperative body with representation from each regional network.

Another issue will arise if regional network boundaries are not aligned with Public Health Unit boundaries, such that one Public Health Unit is a member of more than one network. All other regional network members would need to maintain an understanding of the differing geographic jurisdiction of each member Public Health Unit with respect to its legislated mandate for Communicable and Reportable Diseases under the *Health Protection and Promotion Act.*[17]

Ideally, the regional networks would align with key health service areas but, at minimum, make every attempt not to split a Public Health Unit across more than one network.

Core Indicators

A broad range of core indicators could be included as part of the surveillance activities of the regional networks and PCDC. The Panel feels it is practical to establish certain indicators to be employed by all regional networks across the province, which will maximize the utility of data collected through such a standardized approach. Given the present lack of standardized definitions and testing protocols, and the vast amount of work required to determine these definitions and protocols, the selection by PCDC of which core indicators are to be applied across the province will need to be accomplished in an incremental manner. Ultimately the indicators selected should reflect the goals and objectives established by the Ministry, PCDC, and regional networks. The intent is not to disrupt any indicator collection already underway, but rather to build upon and add focus, structure, and support to such initiatives.

Surveillance for infection-specific core indicators is currently carried out in a number of facilities across Ontario. The most frequent appear to be MRSA and *Clostridium difficile* associated diarrhea. However, these surveillance activities do not occur on a province-wide basis and suffer from the lack of standardized parameters among facilities. The Panel therefore feels that these two infections could logically become the first indicators to be standardized across the province through PCDC and the regional networks.

In tandem with the initial work by PCDC to establish uniform infection-specific core indicators, the regional networks must be funded and become operational. Some regions are well on their way in this regard, while others have not yet initiated the process. In the immediate term and once PCDC has been established, regional network construction and development indicators should be monitored through PCDC. Such indicators should include the development of a vision and operational plan for each regional network, the designation of a lead organization, and the funding of dedicated regional network resources.

Other useful infrastructure indicators to be scrutinized by PCDC in the short-term include: staffing levels for infection control activities as compared to provincial standards set by the committee; training compliance rates; and the presence or absence of a comprehensive infection control program in each regional network member facility or organization.

In the longer term, additional infection-specific core indicators can be added as capacity allows. These could include: other antibiotic-resistant organisms such as multi-drug-resistant *Streptococcus pneumoniae*; surgical site infections; ventilator-associated pneumonias; and intravascular access-associated bacteremias.

Staged Implementation

The preceding discussion has outlined the broad mandate foreseen by the Panel for both a standing PCDC and regional networks. The Panel realizes, however, that implementation of such comprehensive roles and responsibilities cannot take place as a single discrete exercise. Rather, a more prudent approach is needed to implement portions of the comprehensive mandate in a step-wise manner based upon prioritized need.

Before prioritizing these needs in detail, it must be recognized that a baseline requirement for the success of both PCDC and the regional networks is immediately rectifying the absence of comprehensive infection control programs and sufficiently trained infection control personnel in many facilities. The Panel stressed the critical need for education programs in infection control in its Initial Report, and again strongly urges the Ministry to fund and sponsor these in the immediate term.

1. Immediate priorities (1-3 months)

The Panel feels that the most pressing priority for the province is to establish a standing PCDC, together with a Provincial Infection Control Subcommittee. The need for province-wide standards and guidelines in such areas as infection prevention and control, human resource requirements and training cannot be overstated. One of the initial standards to be set by a newly formed PCDC should be articulating the core foundational elements for a formal program of infection control in all acute and non-acute facilities, including necessary resources. In tandem with this as an immediate need, core standards for infection control training at a facility level and standardized educational materials to reflect these should be developed through PCDC in conjunction with appropriately trained educators.

2. Short-term priorities (3-12 months)

Thereafter, PCDC can begin to develop standards and guidelines relating to specific infection prevention and control practices, such as handwashing, sterilization, surveillance programs, and isolation techniques. In turn, these could be reflected in model infection control protocols for use by smaller facilities, developed in partnership with academic health sciences centres. In addition, PCDC should begin to address the absence of standards and guidelines for facility design, including the design of emergency rooms. This topic is discussed in further detail below. The Panel acknowledges that all of this work cannot be realized in a short period of time, but rather that it will be an ongoing process likely requiring the creation of working groups. In addition, in the short-term PCDC should begin to act as an advisory body and resource to the Ministry in relation to disease-specific contingency planning, such as in the area of refining a pandemic influenza plan for Ontario.

Turning to Regional Communicable Disease and Infection Control Networks, at least two initiatives are underway in Ontario at the time of writing this Report. The Panel wholly supports and encourages the ongoing work in these two regions as PCDC is being realized. The Panel urges the Ministry to immediately target funds to support the development of these networks, and to facilitate the development of additional regional networks across the province. It will be useful to evaluate and document the experience of these early networks as a real-life learning exercise for the province.

As part of the initial short-term steps needed to build the regional networks, the various regional players must come together to plan for and develop network infrastructure. In the autumn of 2003, the Panel sponsored a series of acute care/public health sessions that brought together people from each of these two areas of health care to discuss lessons learned concerning how to work better together during crises such as SARS. These sessions were extremely productive and went a long way toward facilitating future collaborative work. As such, the Panel encourages the Ministry to sponsor additional similar sessions across the province as a first step to developing regional networks across the province. It is critical to actively bring the necessary stakeholders to the table to successfully launch this project. This is something that can be achieved quickly and cost-effectively.

Once the necessary groups have been brought together, the Panel sees the following regional network infrastructure development activities as short-term priorities:

- selecting an appropriate academic health sciences centre/tertiary care hospital as lead organization;
- establishing a steering committee;

- developing a local vision and operational plan by the steering committee, including the logical designation of regional network boundaries;
- submitting the operational plan to the Ministry for funding; and,
- designating dedicated resources such as a regional coordinator, medical director, and administrative support.

The operational plan developed by the steering committee should also be made available to all relevant stakeholders so that implementation can be tracked, documented, and used to modify the plan as required. Further, each emerging regional network should designate a lead person specifically for the development process who can interface and communicate with the Ministry and other regional networks concerning development progress and related issues. This person could be the chair of the steering committee or, if in place, the regional coordinator and medical director.

3. Medium-term priorities (1-2 years)

Once PCDC has undertaken the short-term task of developing infection prevention and control standards and guidelines for Ontario, it can begin to look to other parts of its mandate, including establishing standard core indicators to be reported province-wide, advising on research priorities, and advising the Ministry on relevant policy issues.

As soon as each regional network has in place the requisite infrastructure to become operational, the first portions of each network's comprehensive mandate can be undertaken. Taking into account the need for flexibility due to regional differences, the Panel foresees the initial focus to be improving and standardizing infection prevention and control practices across each region, including education. This would be facilitated by standards and guidelines developed through PCDC. From there, the regional networks could begin to focus on standardized responses to communicable disease outbreaks, tracking core indicators, and other quality assurance measures.

Membership is another parameter related to phasing in the regional networks. Initially, membership should focus on acute and non-acute hospitals, long-term care facilities, and Public Health Units. Thereafter, membership can be directed to laboratories, Community Health Centres, Community Care Access Centres, EHS, and other community providers as each network becomes more robust and capable of embracing the needs of such organizations. The Panel is mindful of being overly prescriptive in this regard and appreciates that in certain regions more comprehensive membership may be feasible in the short-term.

Facility Level Impact

The ultimate beneficiaries of creating PCDC and regional networks are the facilities and organizations providing health-related services, as well as the patients and public to whom these services are delivered. Facilities and organizations that are members of an established regional network will reap the benefits of a collaborative and standardized approach to infection control and outbreak response, including access to expertise and surge capacity in times of crisis. Furthermore, members will also benefit through quality improvement resulting from standards, guidelines and core indicators developed by PCDC and implemented through the networks. On the ground level, each member facility and organization will be able to access support to develop outbreak management and other contingency plans, and most importantly, comprehensive in-house infection control programs. Indeed this is the vision. However, the regional network model may offer real benefits for many facilities grappling on their own to figure out how and where to access the skills, tools, and advice to create enhanced infection control programs.

1. In-house Infection Control Programs and Nosocomial Infections

The core functions of an infection control program in both hospital and non-hospital settings are as follows:[18]

- manage critical data and information, including surveillance for nosocomial and other infections;
- implement policies and procedures, ideally evidence-based and consistent with expert consensus;
- intervene directly to prevent the transmission of infection, including outbreak prevention and control; and,
- educate and train healthcare workers, providers and, where appropriate, patients.

It has been estimated that up to 10% of patients in major Canadian teaching hospitals acquire nosocomial infections, including urinary tract infections, pneumonia, wound and blood-stream infections.[19] These estimates are consistent with US figures, where approximately 10% of hospitalized patients develop nosocomial infections annually and approximately 4% of these result in death, with a total attributable cost estimated to be over $4.5 billion annually.[20] This suggests a comparable cost of almost half a billion dollars in Canada.

An additional significant problem worldwide is the emergence and spread of antibiotic-resistant organisms (AROs). A well-known case in point is that of MRSA. As depicted in the following chart, the rate of MRSA in Canada

Executive Summary and Recommendations

Review of Initial Report

Introduction to Final Report

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Chapter Two: Communicable Disease and Infection Control

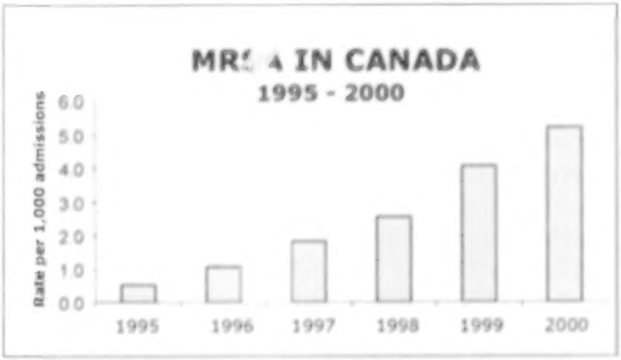
Chapter Three: Point of Care

Chapter Four: Plan for Action

Appendices

Glossary

increased approximately 10-fold between 1995 and 2000, and there is no indication that this trend is abating in any way.



Ref: Dr. Andy Simor, Presentation on Antibiotic Resistance in Canada, 3M Seminar, November 4, 2001

An optimal infection control program should perform surveillance for both nosocomial infections and AROs of epidemiologic significance. A review of Canadian and US professional standards indicates that the infection control practitioner is the most significant resource for reducing the risk of infection in health care, based on activities such as staff education, surveillance, outbreak management, and assessment of the impact of antimicrobial resistance.[21] Implementation of effective infection control programs must be guided by the unique characteristics of each facility and organization, taking into account the level of care being provided and the inherent risks of infectious disease transmission.

Establishing standards and guidelines through PCDC together with setting up the regional networks will go a long way towards implementing comprehensive infection control programs across the healthcare spectrum and the province. Such programs are an important step in aiding the reduction of nosocomial infection rates, as well as reducing the significant associated morbidity, mortality, and financial costs.

The Panel wishes to reiterate that regional networks must not be used to replace or fill gaps for those facilities and organizations without comprehensive infection control programs in place. Rather, each facility and organization is responsible to implement a relevant program, based on standards and guidelines set through PCDC. In addition, the Panel highlights the need for the Ministry to assist in ensuring that adequate human and educational resources are available to properly implement programs that meet PCDC standards and guidelines.

2. The Role of Occupational Health and Safety in Infection Control

At the facility level, the role of occupational heath and safety (OHS) is also significant. In the Initial Report, the Panel noted the need for increased collaboration, and clarification of roles and responsibilities between OHS and infection control. Through discussion with experts from both disciplines, the Panel has learned of measures that could be utilized to further this collaboration.

Facilities should look to ensuring cross representation of OHS and infection control staff on key committees. As well, procedures to protect the privacy and confidentiality of employees and appropriate information sharing protocols should be developed. Clear processes within OHS for the surveillance of communicable diseases and immunization rates within the employee population must be articulated.

As a corollary to these measures to increase collaboration, the Panel feels strongly that OHS should be resourced separately from infection control in order to avoid potential conflicts of interest regarding the health issues of employees; in many facilities, the responsibilities of both are vested in the same people.

3. Facility Design

As discussed in the Initial Report, no single set of guidelines or standards presently exists in Ontario related to infection control and facility design. In that Report, the Panel raised the need for a more comprehensive and consistent approach toward integrating infection control into healthcare facility design. The Panel also discussed issues around emergency department design and capacity, as well as other physical design impediments. The Panel recommended developing a process to identify and remove design impediments as part of a multi-year process.

(a) Standards or guidelines

Following the release of the Initial Report, the Panel has engaged in discussions with many experts to further elaborate facility design guidelines or standards. Currently, architects, programmers, and planners draw upon a series of guidelines from sources such as Health Canada,[22] the Centers for Disease Control and Prevention,[23] the American Institute of Architects,[24] and the Canadian Standards Association.[25] The Panel heard again of the need for a uniform minimum set of standards or guidelines for Ontario that are clearly articulated and can be understood by all involved in healthcare facility design. The development of these should be done by PCDC, in partnership with the Ministry and third-party experts and consultants.

These standards or guidelines should be applicable to new builds as well as retrofits of older facilities. They should also be sufficiently flexible so as to be adaptable to unique facility requirements; to that end, guidelines pertinent to each of tertiary hospitals, regional hospitals, community/rural hospitals, and possibly long-term care facilities may be required.

Rather than function as rigid rules, any standards or guidelines developed should be more objective-based to allow for flexibility and to take into account the rapid evolution in technology and knowledge related to facility design. The Panel heard that standards would also prove valuable as they assist in the planning process for capital projects. In addition, they should act as core principles against which the design, construction, and functionality of both proposed and existing facilities are measured.

Standards or guidelines should further reflect design changes essential to effective infection control. This could include such things as avoiding common toilets, limiting room occupancy to two patients or less where possible, maximizing the number of single patient rooms, and stipulating appropriate construction materials that are easy to clean and disinfect.

It may not be realistic to determine universally applicable best practices in facility design due to the inherent variability between facilities. To that end, information about what aspects of facility design have been successful based on the experiences of existing facilities should be publicly available so that learnings can be readily shared.

(b) Emergency room design

Emergency rooms are the first portal of entry into the hospital for many patients. There has been a trend in recent years to use emergency departments for many tasks not originally contemplated, including outpatient type procedures. The result is an increase in traffic through emergency rooms, mixing patients of various levels of acuity. Furthermore, the high bed occupancy rates in acute care hospitals have led to admitted patients being held in emergency rooms for extended periods of time, worsening problems of emergency room overcrowding and overflow.

Yet the majority of emergency rooms in Ontario are not constructed to prevent and control the spread of infectious disease. Therefore, specific standards and guidelines are required to address the design of emergency rooms. These should focus on such things as the design of triage areas and waiting rooms, given that the degree of risk of a patient spreading an infectious disease has not yet been determined in these areas. In addition, appropriate space and amenities are needed to create holding areas or assessment zones, in order to perform proper and safe assessment of patients who may pose an infectious disease risk.

All emergency rooms require a minimum ability to isolate suspected or actual cases of infectious disease. Different levels of containment rooms can be created, ranging from a separation room without special air handling provisions, to a negative pressure room with HEPA filtration capability, to a full negative pressure isolation room with a technique room (or anteroom) and adjacent bath. At least one resuscitation room should have the ability to become a containment room. An adequately sized anteroom is required for proper full isolation to allow staff to don and/or remove and dispose of personal protective equipment, and carry out any other necessary infection control precautions, in an environment separate from general hospital corridors.

Larger facilities should also consider incorporating containment zones within their emergency rooms. These zones could comprise a series of rooms and/or triage facilities and/or a waiting area, which could be physically separate from the remaining portions of the emergency room with relative ease. Space requirements and the number of patient visits per year (40,000 to 50,000 being an estimated minimum) are the biggest determinants of whether containment zones will be feasible within a given facility.

(c) Facility isolation capability on a regional basis

Facility-specific containment and isolation needs, whether in the emergency room or the facility in general, should be determined based upon a graduated approach to risk. This approach should consider the programs and services offered by the facility, the size of the facility, regional referral patterns, and baseline needs as compared to surge capacity required during an outbreak. Once Regional Communicable Disease and Infection Control Networks are created, they should play a role in coordinating the efficient use of the containment and isolation capability located throughout the region's facilities. This could involve developing triage algorithms or guidelines to assist in categorizing patients according to their relative infectious disease risk. In this way, higher risk patients would be sent to facilities with higher isolation capability and other hospitals would act as screening and referral centres, particularly during outbreak conditions.

All facilities will require some baseline capacity to deal with cases of infectious disease. The regional networks should also play a role in operationalizing facility and design standards and guidelines at a local level, taking into account facility-specific needs.

Another important consideration on a regional level is the availability of negative pressure rooms and full isolation rooms. In the Initial Report, the Panel recommended an evidence-based needs assessment with respect to negative pressure rooms, to be used as a basis for determining a sufficient supply of these rooms on a regional basis. The Panel feels that taking a regional approach is more resource-efficient and cost-effective. A necessary corollary to completing this needs assessment is a determination of the number and location of all existing negative pressure and isolation rooms across the province, including those put in place as a result of SARS. Another corollary is the establishment of guidelines or standards through PCDC, and where possible the regional networks, setting out the necessary number and distribution of these rooms on a regional basis. Clear mechanisms and protocol for accessing negative pressure facilities in a region must be developed.

The Panel feels that increased attention should be paid to the potential use of new technology, such as portable HEPA filtration units and portable single patient isolation units, particularly as a short-term measure in advance of completing a full evidence-based needs assessment. To that end, the Ministry should immediately begin to develop processes to evaluate the appropriate use and effectiveness of such new technology, through the Medical Advisory Secretariat and together with appropriate external expertise.

Figure 1: Before Agency Operational

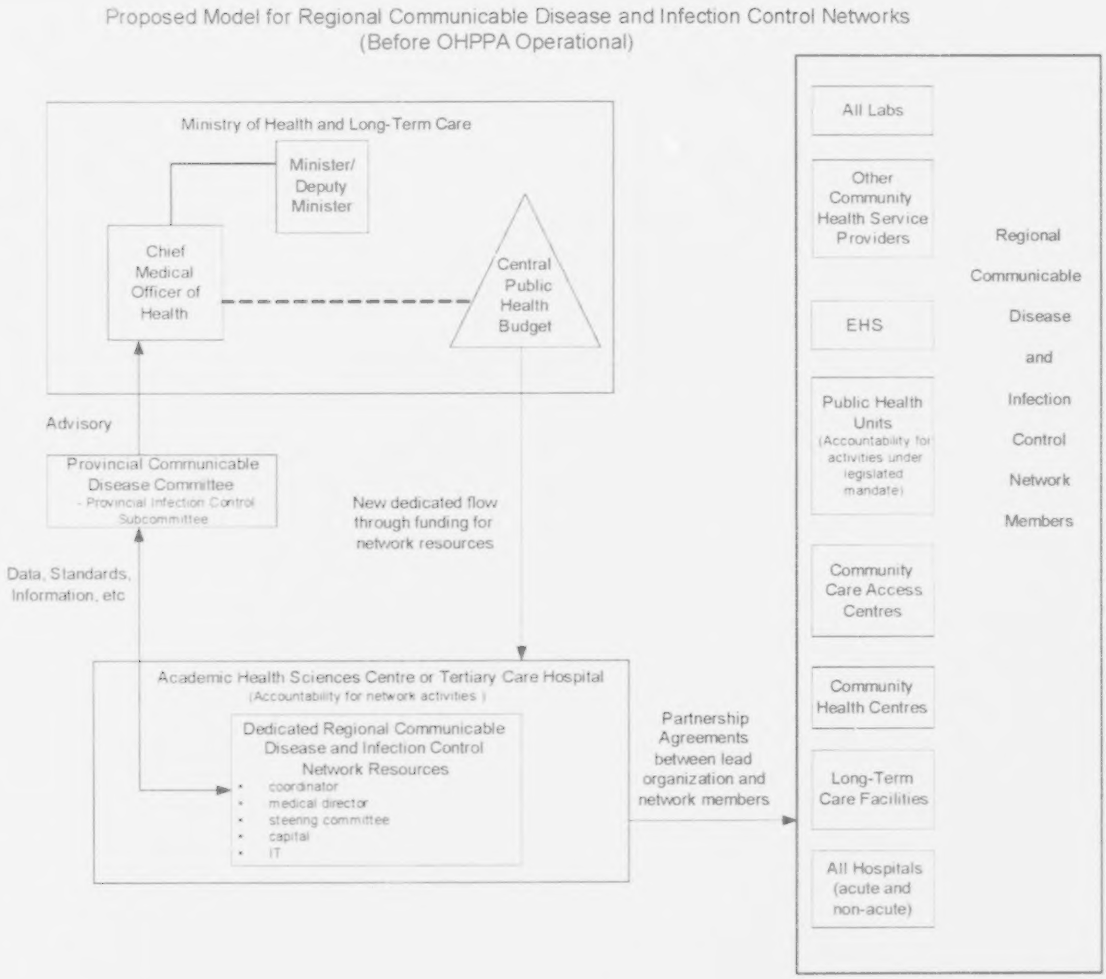
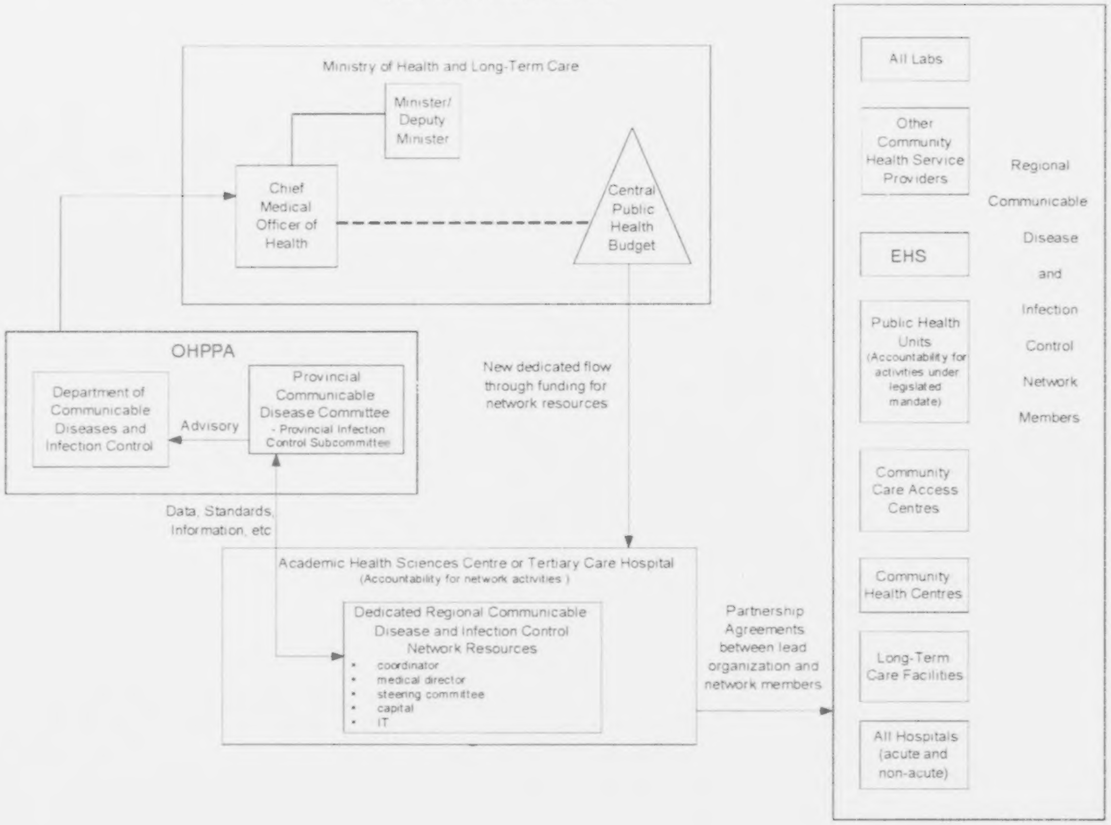

Proposed Model for Regional Communicable Disease and Infection Control Networks
(Before OHPPA Operational)
Ministry of Health and Long-Term Care
Minister/ Deputy Minister
Chief Medical Officer of Health
Central Public Health Budget
Advisory
Provincial Communicable Disease Committee
- Provincial Infection Control Subcommittee
New dedicated flow through funding for network resources
Data, Standards, Information, etc
Academic Health Sciences Centre or Tertiary Care Hospital
(Accountability for network activities)
Dedicated Regional Communicable Disease and Infection Control Network Resources
coordinator
medical director
steering committee
capital
IT
Partnership Agreements between lead organization and network members
All Labs
Other Community Health Service Providers
EHS
Public Health Units
(Accountability for activities under legislated mandate)
Community Care Access Centres
Community Health Centres
Long-Term Care Facilities
All Hospitals (acute and non-acute)
Regional Communicable Disease and Infection Control Network Members

Figure 2: After Agency Operational

Proposed Model for Regional Communicable Disease and Infection Control Networks
(After OHPPA Operational)


Ministry of Health and Long-Term Care
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All Hospitals (acute and non-acute)
Regional Communicable Disease and Infection Control Network Members

Recommendations

Provincial Communicable Disease Committee

Implementation and Reporting

29. The standing Provincial Communicable Disease Committee should be in place by June 30, 2004. Necessary subcommittees should also be created, including a Provincial Infection Control Subcommittee. The terms of reference of the Provincial Communicable Disease Committee should take into account and incorporate, as appropriate, the mandate and membership of the Advisory Committee on Communicable Diseases.

30. The Provincial Communicable Disease Committee should initially report to the Chief Medical Officer of Health and transition to reporting to the Director of the Department of Communicable Disease and Infection Control within the Ontario Health Protection and Promotion Agency once it is operational.

31. The Provincial Communicable Disease Committee should establish communication pathways and protocols with the Regional Communicable Disease and Infection Control Networks that are bi-directional in nature. These pathways and protocols should be capable of integrating with other communication and information technology supports created as part of the infrastructure of the Ontario Health Protection and Promotion Agency, as appropriate.

32. The Provincial Communicable Disease Committee should establish a dedicated webpage, with access by the public as well as by healthcare providers. The webpage should post all approved standards and guidelines as well as those under development, in addition to any relevant advisory statements.

Membership

33. The first chair and core members of the Provincial Communicable Disease Committee should be appointed for fixed but staggered terms by the Minister of Health and Long-Term Care upon the recommendation of the Chief Medical Officer of Health through a transparent nomination process. Once the Ontario Health Protection and Promotion Agency is established, appointment should be through the Board of Directors of the Agency.

Core membership of the Provincial Communicable Disease Committee should include at a minimum representation from:

- infection control
- infectious disease
- microbiology
- occupational health and safety
- public health
- epidemiology

with both acute care and non-acute care interests represented.

Non-core membership of the Provincial Communicable Disease Committee should include the Chief Medical Officer of Health and at least one representative from the Regional Communicable Disease and Infection Control Networks, such as the chair of a Regional Coordination Committee.

Functions and Mandate

34. The initial mandate of the Provincial Communicable Disease Committee should be to establish standards and guidelines for infection control applying evidence-based best practices.

a. The first infection control standards and guidelines to be developed by the Provincial Communicable Disease Committee should:

- articulate the core foundational elements for comprehensive infection control programs within acute and non-acute facilities;

- address the necessary human resources and skill sets to implement comprehensive infection control programs; and,

- address infection control training at a facility level, including where appropriate the development of standardized educational materials in conjunction with trained educators.

As a supporting measure, the Ministry must immediately increase and fund education programs in infection control and must develop additional strategies to recruit infection control professionals.

b. The Provincial Communicable Disease Committee should, through phasing in of the second portion of its mandate, develop standards and guidelines relating to specific infection prevention and control practices, such as:

- handwashing techniques
- cleaning and disinfection protocols
- specific surveillance programs
- isolation techniques
- proper use of personal protective equipment
- facility design, including emergency room design

c. The Provincial Communicable Disease Committee should, through phasing in of the third portion of its mandate:

- establish core indicators to be reported by each type of facility across Ontario;
- develop self-audit and peer audit systems for use by facilities and organizations;
- develop model infection control protocols or programs as appropriate and as required;
- advise the Ministry and/or the Ontario Health Protection and Promotion Agency on infection control and communicable disease research priorities for Ontario; and,
- advise the Ministry on relevant infection control and communicable disease policy.

35. At the request of the Chief Medical Officer of Health, the Provincial Communicable Disease Committee should begin to act as an advisory body to the Ministry on specific issues, such as refining a pandemic influenza plan for Ontario and issuing advisory statements related to infection control and communicable disease issues.

Regional Communicable Disease and Infection Control Networks

Mandate

37. Each Regional Communicable Disease and Infection Control Network should include the following core activities as part of its mandate:

- identify existing infection control resources and practices within the region to determine core capacity and determine gaps;

- assist network members in implementing standards and guidelines developed by the Provincial Communicable Disease Committee;

- coordinate surveillance of core indicators;

- support activities of Public Health Units as these are mandated under the *Health Protection and Promotion Act;* and,

- report regional data and information centrally.

Membership

38. Membership in each Regional Communicable Disease and Infection Control Network should occur at the facility or organization level, and include at a minimum:
    - acute and non-acute care hospitals
    - long-term care facilities
    - Public Health Units

Additional membership by laboratories, ambulance services, and community-based services and providers is to be encouraged as network capacity and infrastructure develop.

Implementation

39. The Ministry should immediately commit to appropriate funding for the regional network initiatives already underway in Ontario. Further dedicated funding should be set aside immediately toward the development of additional networks across the province, as part of a multi-year plan for the implementation of networks on a province-wide basis. This funding should be part of a targeted funding envelope.

    a. Building upon a review of the experiences of the preliminary network initiatives, the Ministry and networks under development should draw resources and learnings to support the subsequent refinement of networks across the province.

    b. As an enabler and preliminary step to the development of Regional Communicable Disease and Infection Control Networks across Ontario, the Ministry should immediately sponsor additional planning sessions that bring together relevant stakeholders from acute care and public health, among others.

40. Regional stakeholder organizations integral to the development and implementation of Regional Communicable Disease and Infection Control Networks should commence with the following activities, through phasing in of each network's mandate:

   a. Establishment of a steering committee for each network with core membership to include at a minimum the following:
      - acute care lead organization
      - Public Health Unit(s)
      - infection control practitioners
      - physician experts
      - microbiology
      - occupational health and safety
      - the regional coordinator
      - the medical director

   b. Selection of an appropriate acute care lead organization. Public Health Units should maintain their lead status on matters that clearly fall within their legislated mandate, such as the creation of outbreak response plans, and Communicable and Reportable Diseases surveillance, investigation, and response.

   c. Development of a local vision and operational plan by the steering committee.

   d. Designation of projected network boundaries taking into account the following factors in defining the boundaries of the Regional Communicable Disease and Infection Control Networks:

      - location and amount of core capacity in infection control expertise;

      - rational patterns of patient movement, including referral patterns;

      - existing service clusters;

      - demographics to be served by the network, including population and bed number; and,

      - core geographical boundaries.

   e. Submission of the operational plan to the Ministry for funding.

41. A mechanism should be established to ensure that all Regional Communicable Disease and Infection Control Networks are able to communicate and link with one another.

Facility Design

43. The evidence-based needs assessment should be undertaken using standards and guidelines developed through the Provincial Communicable Disease Committee. As an additional support to the needs assessment, the Ministry should develop and maintain a current inventory of the number and location of all existing negative pressure and isolation rooms in Ontario.

44. Upon the completion of clear standards for infection control in facility design and a review of existing capacity, it is proposed that the Ministry establish a specific dedicated fund of one-time costs, increasing from $10m in Year 2 to $40m in Year 4, to address priority remediation requirements. Criteria for prioritization should be set based on recommendations from the PCDC and/or appropriate sub-committees.

45. The Ministry, through the Ontario Health Technology Advisory Committee, the Medical Advisory Secretariat, and additional relevant external expertise, should immediately establish a process to evaluate the appropriate use and effectiveness of new technology applicable to isolation precautions, such as portable air filtration units and portable single patient isolation units.

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Overview

In reflecting back on Ontario's experience with SARS, the Panel has focused much of its attention on the need for renewal in public health and on the supports and infrastructure required to prepare effectively for an infectious disease outbreak. Ultimately, however, all of these proposed changes are about providing better healthcare services, better access to those services by Ontarians, and safer work environments for our healthcare providers.

While the mandate of this Panel is to make system-level recommendations, we feel strongly that the changes we have brought forward are not about some abstract system, but about patients and those who provide their care. Here, we have focused on a number of key themes:

- The need for post-event evaluations to inform future approaches for system recovery and returning healthcare institutions to pre-event operations – based on a recent study that is the first to quantify the impact at a system level of restrictions implemented during SARS.
- The development of a provincial critical care system or network to manage Ontario's critical care resources during periods of sudden and unexpected demand (surge), and usual demand.
- The need to identify and provide the necessary communication and physical and emotional supports for individuals in the event of a local service interruption or health emergency, particularly in the areas of visitor policies and quarantine measures.

Recognizing that a healthcare system is also built upon the foundation of the individuals who enable it to function on a daily basis, our Initial Report focused to a great extent on issues related to health human resources. There were three key issues that required further consideration and that have been included in this chapter. These include:

- maximizing full-time and minimizing casual employment with a goal of moving the system to 70% of staffing being full-time;

- recognizing that healthcare professionals have a duty to provide care to patients during a health emergency and in outbreak conditions, and that employers have a reciprocal duty to protect and support employees; and,
- considering the role and involvement of medical students in contingency planning for an emergency.

Primary Anticipated Costs

Annualized operating costs for a critical care system/network estimated at $1.5m by year two – with estimated developmental costs of approximately $0.6m in year one.

Introduction

In our Initial Report, we recognized the immense emotional and physical impact experienced by individuals exposed to SARS, whether to the disease itself or to the wide-ranging repercussions that it had. We will explore this impact further in this Final Report, reflecting on some of the issues faced by the patients who experienced the disease first-hand, and on individuals and their families who were affected through quarantine or other control measures, including accessibility to the broader healthcare system.

The consequences of Ontario's experience with SARS played out on a scale rarely before experienced in this province. Although SARS was largely an issue for the Greater Toronto Area (GTA), the reverberations spread right across the province and across the country.

Recognizing the toll that resulted from the SARS outbreak, the Panel undertook a series of focus groups and one-on-one interviews to listen to the stories of patients and families. This was undertaken to the extent possible given the absence of legal protection afforded by our process.

Our recollection of SARS is of a virus that slipped unknowingly into a population and left many families, and indeed the province, with an incredible sense of loss. Families watched their loved ones succumb to a disease under circumstances previously unimaginable. Those individuals whose lives were most directly affected often experienced the healthcare system from a state of isolation, unconscious and most often breathing with only with the assistance of a ventilator. Some have little memory left of this time.

Families, when able to visit their loved ones, had to dress in full protective gear – gowns, masks, and gloves – feeling all of the emotions that are brought on by watching a family member who is intubated and relying on a device to assist breathing. We also heard stories about those who were not able to say goodbye to their loved ones, about those who went into quarantine, about those who were not able to hold or attend memorial and funeral services, about individuals who were scared to hold a newborn or feared infecting a loved one, and about paramedics who faced quarantine three or more times. We have not forgotten their terrible loss and the incredible sadness experienced through this time.

The stories include the first-hand accounts of patients who saw paramedics and other healthcare workers in full protective gear – looking like 'spacemen' while attending to those in need. Healthcare providers who, while treating others, became sick themselves, brought the illness home to their families, or watched their colleagues succumb to the disease.[1] And we remember that almost one year ago, Ontario's experience included the first death of a healthcare worker from SARS acquired while providing patient care.

The Panel's role was to look primarily at what we could learn at the health system and policy levels. That said, we recognize and accept that SARS was about people. We also recognize that the psychological and long-term effects of having SARS are not fully known or understood. Indeed, our work has benefited from the strength of those who are survivors of SARS, who may have experienced tremendous loss in their families, but who are willing to give from their experience and participate in studies that will enable us to prepare should SARS or a similar disease return.

Patient Access to the Healthcare System

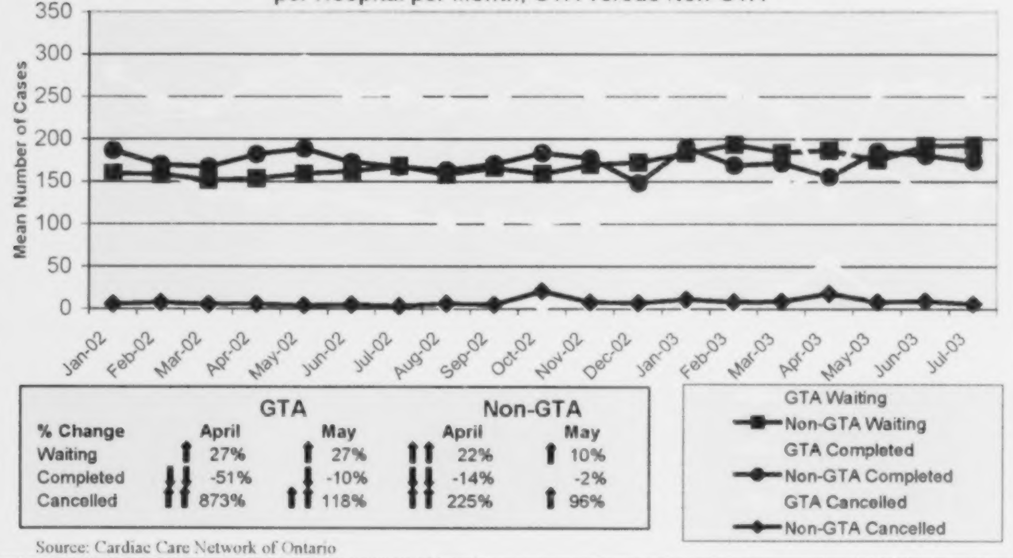
1. Impact on Health System Utilization

The restrictions imposed on the healthcare system during the SARS outbreak had clear implications on the ability to safely deliver care. In our Initial Report, we discussed the extent to which directives impacted the broader healthcare community. With an interest in understanding the broader impact of the SARS outbreak on the system based on actual data, we commissioned the Institute for Clinical Evaluative Studies (ICES) to undertake a study on the impact of SARS restrictions on health system utilization by Ontario residents. Early findings of this ongoing work focused on a small selected group of "relatively crude measures of health care delivery at the system level."[2] During the course of the study, data was not readily available to provide evidence of the impact on patient outcomes and wait list activity.

We expected that the restrictions would impact individual ability to access services; however, ICES is working to use emerging data to view this impact at a system level. Not surprisingly, early data confirms that the utilization of health services was significantly impacted by the health system's response to SARS. The findings indicate that even the most essential services were affected to some extent, however, the greatest impact was on scheduled services such as cancer surgery. This is consistent with the primary focus of the directives in force at the time. As we have learned from SARS, improved coordination and advance planning can assist us greatly in the future to ensure that appropriate scheduled services are maintained to the extent possible.

Logically, there was also a marked difference in service disruption in the GTA compared to the rest of the province. "Given the large number of tertiary care centres within the GTA, this meant reduced access to highly specialized services such as cardiac catheterization and MRI, specialized programs such as oncology, neurovascular diseases and traumas, and difficult access to referral for off-site specialty care, both within the GTA and in surrounding communities which depend on the GTA for highly specialized care."[3] The following graph highlights the differences in access to care within and outside of the GTA.

Exhibit 8.3. Mean Number of CATH Cases Waiting, Completed and Cancelled per Hospital per Month, GTA versus Non-GTA



	GTA		Non-GTA	
% Change	April	May	April	May
Waiting	↑ 27%	↑ 27%	↑↑ 22%	↑ 10%
Completed	↓↓ -51%	↓ -10%	↓↓ -14%	-2%
Cancelled	↑↑ 873%	↑↑ 118%	↑↑ 225%	↑ 96%

Source: Cardiac Care Network of Ontario

Reprinted with permission from ICES, 2003 (page 41)

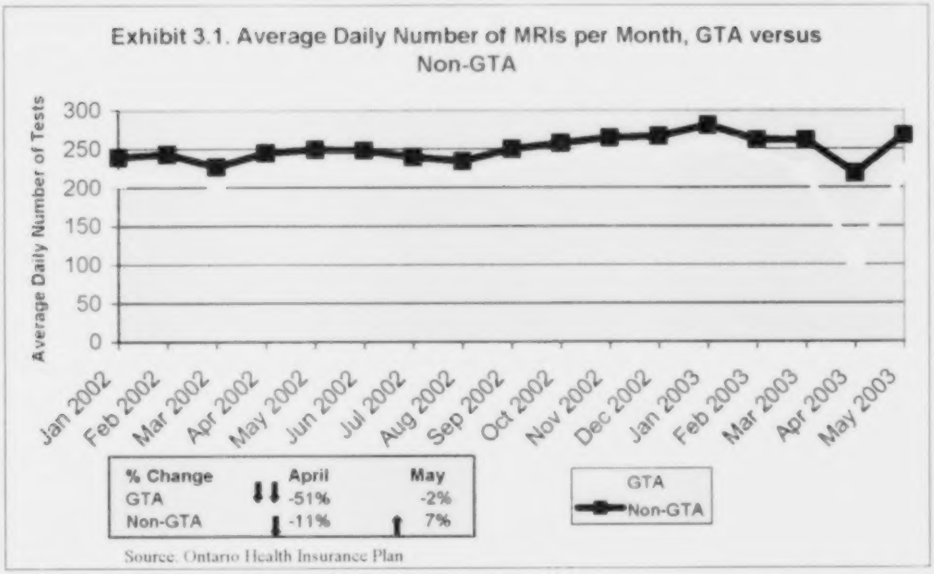


Exhibit 3.1. Average Daily Number of MRIs per Month, GTA versus Non-GTA

% Change		April		May
GTA	⬇⬇	-51%		-2%
Non-GTA	⬇	-11%	⬆	7%

Source: Ontario Health Insurance Plan

Reprinted with permission from ICES, 2003 (page 46)

Of particular note is the area of urgent inpatient services. For example, initiating mechanical ventilation (likely as a result of the decrease in the types of surgery requiring these services) and physician consultations for acute myocardial infarction were reduced in the GTA during the SARS outbreak.

In the area of outpatient procedures, there were significant but expected declines in the least urgent procedures during SARS; however, there was (thankfully) less of an impact on the most essential outpatient services studied, such as chemotherapy and peri-natal visits. The most pronounced changes appear to have been experienced in outpatient diagnostic testing, particularly within the GTA during April 2003, as illustrated in the graph below. Considerable decreases in diagnostic imaging tests and 'non-critical' visits to the emergency department outside the GTA took place, suggesting that people living in areas not affected by SARS also changed the method by which they interacted with the health care system.
The impact of SARS on health services utilization appears to have been greater in April 2003 than in May 2003, indicating that the directives during the second wave of SARS and increased knowledge and coordination resulted in less system impact than those instituted during the first wave.[4] This appears to corroborate in a quantitative way some of the observations made in the Report of the National Advisory Committee on SARS and Public Health, namely that the degree of knowledge and coordination during the

second phase of the SARS outbreak resulted in a measurably lower impact on the overall system and on people's ability to access care.[5]

The study also found a decline in overall physician utilization within the GTA, primarily in April but also in May 2003. This has further been substantiated by information regarding physician services utilization. Decreases in physician professional fees observed in each of April (↓11.9%), May (↓0.6%) and in June (↓2.2%) 2003 further corroborate that Ontario's response to the second wave appeared to have the benefit of a more informed and coordinated approach with less impact on basic healthcare services.

The study examined a number of other key areas and reported the following:

- Major decreases in utilization were found from within and outside of the GTA for many of the conditions studied, and were expected for many of the less urgent conditions such as strains, superficial injuries, and back injuries.[6]

- Major changes in cardiac care during the SARS outbreak, especially during April 2003. In April 2003 there was a significant drop in the mean number of bypass surgeries, percutaneous coronary interventions, and cardiac catheterizations completed in the GTA.[7] Despite this, the number of patients waiting for these procedures did not increase, which raises important questions about referral patterns during SARS.

This initial study has provided us with a valuable first glimpse into the actual impact of SARS on health services utilization. The Panel acknowledges that ICES is embarking on a large comprehensive study that will further examine the overall system impact of SARS using broader health system data. This information, when fully developed, will be of considerable value and will provide some of the data that will enable us to learn and refine our approaches to health emergency response.

While the restrictions initially imposed during the SARS outbreaks were dramatic, they were done as a protective measure given the very little scientific and clinical information available internationally on this new disease. Understanding the impact of these measures on utilization and patient outcomes will provide valuable insight to the Ministry and to the healthcare sector – information that could be used in developing and refining crisis contingency plans and planning for surge capacity in critically vulnerable areas.

The Panel also encourages the Ministry to consider formalizing post-event evaluations using qualitative data, debriefs, and comprehensive and appropriate health system and health service data. It became apparent early on in the outbreak that although the system could operationalize containment measures such as cancelling scheduled surgeries in a very short period of time, the time needed to return the system to pre-event operations would take significantly longer than many of us assumed. Relying on the use of health service impact and patient utilization and outcomes as key indicators, findings from post-event evaluations should be given serious consideration in ongoing contingency planning; that is, to inform future approaches to outbreaks and health emergencies as well as service interruptions at the local level. Such evaluations must also inform processes designed for system recovery and returning healthcare institutions to pre-event operations. The Panel also encourages the Ministry to consider, in its deliberations regarding future emergency measures, a distinction between those procedures that may be considered elective in that the individual has chosen to undergo the procedure e.g., cosmetic surgery and those procedures that are scheduled and considered 'necessary' e.g., cancer surgery. While there is no guarantee in an emergency that both will not be impacted, there are distinctions that may be able to be drawn in future emergencies.

2. Critical Care Capacity

The Panel recalls learning about a period of time during the first wave of the SARS outbreak that was characterized by heightened fear and a sense of highest risk when it was believed that both the trauma and burn units of a large teaching hospital in Toronto would be shut down as a result of the outbreak. In addition, at various points throughout the crisis, the province and physicians also experienced periods of intense frustration while trying to locate critical care beds – at the time there was fear about the significant impact that critical care closures may have had. This pointed a spotlight on how we organize and structure our critical care resources to ensure access to care.

In our Initial Report, the Panel called for a review of the accuracy and utility of the CritiCall program, including the reliability and timeliness of data, and an examination of what role it could play in the management of future outbreaks. CritiCall is a mechanism by which hospitals track and report available critical care beds. The Panel continues to believe that a pre-requisite for effectively managing critical care capacity is up-to-date and accurate critical care bed capacity data.

The ICES work referenced earlier in this chapter also commented significantly on this issue, confirming the Panel's identified need for this review. The ICES study reports a marked increase in apparent availability of staffed critical care beds in both larger and smaller GTA hospitals during and after the SARS outbreak. This does not correspond at all with anecdotal reports from the field of a shortage of critical care access during SARS. Large hospital-specific fluctuations in the data existed (sometimes up to 15 to 20 beds over one day) and found that some hospitals, but not others, reported a 'negative' number of beds some days if critical care patients were being cared for in the emergency department. This raises some concerns about the data being reported by hospitals in the CritiCall network.[8]

As described earlier, SARS exposed the need for the healthcare system to better manage access to healthcare resources within the system during an emergency. We also noted that there has been movement on a number of fronts to begin to address key issues from a health system perspective.

The Panel commends the Ministry for engaging leaders, planners, and frontline healthcare professionals in critical care, including nurses, respiratory therapists, and physicians to identify issues and seek solutions to better manage critical care in Ontario. Through this process, the following needs have been identified:

- establish a systems approach to organizing and planning for critical care;
- plan for sudden and unexpected demand; and,
- disseminate best practices to improve patient outcomes and as a result, accessibility to critical care.

The Panel has also learned of a proposal to create a critical care working group that would make recommendations to the Ministry by mid-2004 on a proposed system of critical care.

The proposed system or network in critical care suggested in the proposal would see the establishment of a Critical Care Central with the role to:

- assume leadership during periods of sudden and unexpected demand;
- maintain and report on data describing critical care utilization creating opportunities for benchmarking;
- review, evaluate, and recommend adoption of best practices with respect to unit and patient management, including how-to approaches;
- recommend technology that should be evaluated prior to widespread dissemination; and,
- create mechanisms to develop leaders in medicine and nursing that manage in a system/network of critical care.

In the proposed model, there would also be increased co-ordination and collaboration throughout the province among hospitals that house critical care resources to disseminate best practices, diffuse innovation, and support and facilitate the work of Critical Care Central through such means as data collection and benchmarking.

We understand and support that the primary goal of this effort is to ensure critical care resource accessibility by creating a system that manages Ontario's critical care resources during periods of:

- sudden and unexpected demand (surge), and
- usual demand[9]

Of primary interest to the Panel is the need for access to critical resources during a health emergency, i.e. the need for surge capacity,[10] and to maintain maximum patient access to necessary critical care services.

There also appears to be a need to ensure that mechanisms exist to measure and report on critical care activity, including indicators of quality and patient safety. The Panel also encourages health services research for the purpose of improving efficiency and effectiveness of Ontario's critical care system that would lead to improvements in accessing critical care resources.

Through this work, individuals and organizations have already signalled their interest and indeed their intent to work collaboratively to address issues from a systems perspective. The Panel commends the Ministry and its partners for the momentum that has been generated by their efforts and encourages continued engagement with the critical care community to move toward the establishment of a system/network of critical care.

3. Family-Centred Care and Visitor Policies

In our Initial Report, the Panel discussed in great detail the directives issued by the Ministry during the SARS crisis. We also paid particular attention to the challenges faced by patients, families, visitors, staff, and the general public as a result of those directives relating to visitor restrictions. Families and visitors were restricted at sites with and without any identified SARS exposure, in and out of the GTA, in hospitals and long-term care facilities. There has been considerable debate and reflection following the outbreak on the impact of family and visitor policies on the provision of care to patients.

We noted in the Initial Report the fact that during a period of intense stress, some healthcare providers found that the tight restrictions on visiting actually removed or lessened one element of stress (i.e. managing visitors), and played a role in limiting exposure to SARS. That said, the Panel has heard more of the emotional and psychological impacts that the restrictions had on patients and families. For example, patients with Alzheimer's Disease were going in for surgery without a loved one allowed to accompany them, and in other cases, people died without seeing their loved ones one last time. The essential role of family in care and treatment decision-making and as an important element of social support for patients was made secondary to infection control concerns. These stories identified for the Panel the need to explore this impact further; hence, we commissioned an ethical analysis of the issue that has led to suggestions for future considerations around visitor policies.

The analysis, *Visitor restrictions during a public health emergency: ethical issues and guidelines for policy development*, highlights the concern expressed by a number of healthcare providers about the detrimental psychosocial impact of visitor restrictions that was most heavily felt by certain groups of patients and their loved ones. The study draws particular attention to "imminently dying patients who were terminally or critically ill, paediatric patients, patients who were experiencing a significant life event and patients who were hospitalized for extended lengths of time as those who suffered emotionally, psychologically, and socially" – arguably the patients who required visitors the most but who potentially faced a disproportionate impact when blanket restrictions were applied.[11]

The study begins to identify other factors that contributed to social isolation, such as language and communication barriers, and draws attention to the increase in fear and anxiety of individuals who were concerned about the safety and well-being of their loved ones when they were not able to visit them in the hospital. The study provides some valuable practical advice on balancing the need to restrict access with meeting patient and family needs.

The study also describes visitor policies imposed during SARS as being unnecessarily restrictive to patients, visitors, and staff in certain cases, particularly when limited or no evidence of potential or actual risk existed. The study recommends that policies regarding visitor restrictions be guided by the principle of being proportionate to the potential harm that the institution is attempting to avoid, while recognizing that some degree of visitor restrictions may always be necessary and appropriate. The degree of harm, particularly early in SARS, was not fully known. The Panel supports this recommendation.

The issue of family participation and involvement in care should be differentiated from the myriad of other visitors to patients. The Panel is aware of the significant contribution that family and visitors play as conveyors of medical and treatment histories that improve effective care and as social supports to those who were likely experiencing feelings of isolation, abandonment, and being ostracized. Social support is now widely recognized as a key determinant of health and can be defined as "that assistance available to individuals and groups within communities which can provide a buffer against adverse life events and living conditions, and can provide a positive resource for enhancing the quality of life. Social support may include emotional support, information sharing and the provision of material resources and services."[12]

Studies have found that social isolation and exclusion are associated with increased rates of premature death and poorer chances of survival after a heart attack. In fact, people who get less social and emotional support from others are more likely to experience less well-being and more depression.[13] Additionally, some experts have found that the health effect of social relationships may be as important as some already established risk factors such as smoking, physical activity, obesity, and high blood pressure.[14]

While these studies reflect impacts over time, research on temporary isolation is limited. At most, we can say that a number of providers have relayed to us the challenge of getting full and accurate treatment histories in the absence of family present. This is clearly an issue, even in the short-term.

The study presents a thoughtful analysis of the underlying ethical values and conflicts associated with visiting restrictions as they relate to three key themes:

1. Detrimental psychosocial impact. The limitations imposed by any family or visitor restrictions should be proportional to the potential harm to be avoided; furthermore, responses to mitigate any potential harm caused by these limitations should be put into place wherever possible. These could include measures to facilitate communication between patients and significant others, such as e-mail access and free telephone service. Whenever possible, patients should be asked to identify whom they would like as their visitors.

2. Communication breakdowns. Transparency with regard to the rationale for family/visitor restrictions is important to ensure that the public does not see these as being arbitrary or excessively harsh.

3. Wide and varied interpretation, implementation, and response to Ministry directives.

Based on the analysis, the report developed a sample visitor policy that could potentially be used for a public health emergency.[15] The Panel feels this sample policy could be helpful to guide both the Ministry and healthcare organizations – the policy is included as Figure 1 at the end of this chapter. Organizations are urged to develop policies that differentiate between family and/or significant others' involvement in care, and individuals who are visiting on a more social basis.

It must be stated that every health emergency is different and will require different approaches. That said, the ethical principle and challenges will often pose questions on a similar axis as those posed by SARS. Therefore, the principles behind the learnings remain valid.

During SARS, additional anxiety resulted from communication breakdowns related to visitor restrictions. The Panel has already explored these communications challenges and the variation in how visitor restrictions were applied from site-to-site, contributing to anxiety for patients, families, and healthcare workers. In this Final Report, the Panel is primarily interested in taking the lessons learned and encouraging the Ministry to work with the healthcare sector to develop and/or disseminate model policies regarding visitor restrictions. These policies should address the nature of restrictions as they relate to level of risk, as well as the reciprocal response required by facilities to mitigate harms. Of primary interest to the Panel is the need to "balance, wherever possible, the benefits of visitation for certain populations (e.g., terminally ill or imminently dying, critically ill, paediatric patients, patients in labour) and/or significant others with the harms associated with strict limitations to visitors."[16]

4. Communication at the Local Level

In our Initial Report, the recommendations focused on the need to put significant infrastructure in place to ensure enhanced communications during a health emergency, particularly with healthcare providers. Our interest was in ensuring that the capacity to communicate to the broader healthcare system was in place and that both provincial public health risk and crisis communications strategies sufficiently comprehensive in the province for the next public health emergency. In Chapter One of this Report, we provide a description of the role of the proposed healthcare provider communications within the Agency and a reference point for the necessary skills that would need to be in place at the agency level to address risk communications.

Since the release of our Initial Report, the Panel has undertaken further discussions with health communicators to understand better the core communications capacity that is required to address communication needs.

Also in our Initial Report we recommended significant enhancements to local public health capacity. Since then, the Panel has learned that for a variety of reasons, Public Health Units are experiencing challenges in maintaining core communications capacity at the local level. Moves to integrate public health communications into a regional infrastructure are in some cases drawing on the communications resources available within local Public Health Units. We note with some concern the potential dilution of communications capacity within Public Health Units. If coupled with shifting priorities at the municipal level, it could potentially compromise a Public Health Unit's ability to respond to local public health needs and to deliver information in a timely way, particularly to the public and to local healthcare practitioners.

The Panel strongly supports the need to have effective capacity at the local level to develop communications strategies to address local public health issues, but also feels that capacity can be better coordinated and supported at a provincial level. Public Health Units require the resources to address public health risk communications as well as crisis communications at the local level with support from the Agency if need exceeds capacity. This also speaks to the need for communications personnel to have active participation in community-based contingency planning and the need for dedicated communications resources to adapt provincial plans to local needs.

To maximize effectiveness, local Public Health Units also need to maintain a degree of independence in setting priorities for the allocation of their communications resources with regard to strategies, initiatives, and training. Each Public Health Unit will also need to address population-specific issues, such as cultural, linguistic, or other determining features of population groups. Regardless of how strong central support grows, it does not negate the need for effective public health communications capacity at the local level.

The Panel also encourages local Public Health Units to ensure that communications staff is trained in public health risk and crisis communications as well as media relations. In the future, part of that central support may be facilitated by the proposed Agency.

Given the role and relationship of local Public Health Units with the Agency and the anticipated level of activity, particularly in relation to information dissemination, each Public Health Unit will also need to have sufficient communications staff to deal effectively with this flow of information. In Chapter One we highlight the variety of health information networks, alert systems, and disseminating resource materials and other information. No matter how well structured, the effectiveness of Agency communications activities will be compromised without the necessary communications links at the local level; that is, through the communications staff and supporting infrastructure.

SARS highlighted that since local Public Health Units can often be first responders in an infectious disease outbreak, core communications capacity is vital to an effective response. To this end, the Panel encourages that public health risk communications should be included as a core service and skill set when the *Mandatory Health Programs and Services Guidelines* for public health are reviewed as proposed.

Ontario's experience with SARS was marked by the magnitude by which Ontarians, including the healthcare community, relied on the media for information during the SARS outbreak. Hence, there is a need for Public Health Units to include media relations skills as part of their core communications capacity.

In summary, we believe that local Public Health Units must be sufficiently resourced to do the following:

- implement public health risk communications strategies at the local level;
- develop resources/information on local health issues (where required);
- engage in contingency planning activities at the provincial (where required) and local levels;
- participate in provincial and initiate local networking initiatives; and,
- implement mechanisms, such as translation of materials, to reach all local and hard-to-reach populations (as determined by local need and coordinated with the Agency, where specialized technical supports may be required).

A. Networking at Provincial and Local Levels

The Panel has been made aware of the need for networking opportunities among health communicators. In Chapter One of this Report, we discuss the need for the Agency to provide an infrastructure to permit networking among health communicators in all sectors of the healthcare system. We also recommended the establishment of a provincial Risk Communications Network.

These efforts will play an essential role in creating forums and opportunities for communicators to discuss issues of common interest and, where required, inform and develop communications protocols as part of shared contingency planning efforts. These networks will also create opportunities to share effective communications practices and to plan for health emergencies at the local level in a collaborative manner. Part of the role of Regional Communicable Disease and Infection Control Networks can be to assist in establishing these links on a local and regional level.

The Panel also encourages including the media in these network initiatives, wherever possible and appropriate, as a mechanism to create a better bridge between the needs of the overall network and the expectations and interest of local media. In the longer term, it provides opportunities to put in place some clearer lines of communication.

B. Sharing Effective Strategies among Healthcare Organizations

During the SARS outbreak, many organizations developed strategies to keep their staff informed about the impact on and within their organization and to address their questions and concerns. Many of these initiatives served as critical vehicles to interpret and disseminate Ministry directives and to convey their implications for individual organizations and staff.

The Panel learned about many communications vehicles and approaches that were instituted during SARS through our Call for Submissions process in the fall 2003. We recall the many organizations that shared their successful communications practices during SARS. That said, we also heard that there appears to have been very pronounced differences in the level and effectiveness of local communications.

Many organizations established web-based resources that allowed for information to be available to staff, in some cases across many sites, in a timely way. In one GTA hospital, the organization held daily forums and used video and teleconferencing extensively to ensure frontline staff and clinicians received information and directives from their command centre based on the directives originating from the Provincial Operations Centre. The forums were often held more frequently to keep pace with rapidly changing information. The organization also used the forums to "engage the most knowledgeable people at the ground level in problem solving 'process' changes dictated by the directives and stringent infection control guidelines." They provided real-time opportunities for feedback and discussion on issues that needed immediate action. In one region, several Community Care Access Centres developed a strong communications network through which they could share ongoing information and guidelines. This effort was cited to be invaluable.

In our Initial Report, we highlighted Toronto Public Health's (TPH) initiative in setting up a SARS Hotline for the citizens of Toronto to provide health education and counselling, case finding, contact identification, recognition and follow-up of emerging issues, and to gather and relay information between the community and TPH. Although it had its challenges, the service received over 300,000 calls altogether, with a daily peak of 47,567. "Diverse language skills among Hotline staff plus AT&T translation services were used to overcome multiple language barriers. The Hotline operated seven days a week from 8:30 a.m. to 11:00 p.m. Other methods of public communication included fact sheets for different audiences, quarantine directives for affected groups, print and web material translated into four languages, train-the-trainer sessions for community agencies, standard letters for conference planners, and outreach through local community meetings to address health risks and racial discrimination."

The Panel wishes to draw on the lessons learned of healthcare organizations by encouraging the sharing of best practices in the area of communications. Our interest is also to be informed by evaluations that were undertaken by a number of organizations in their efforts to assess their response to the SARS outbreak and to support their future preparedness for a health emergency or other event that has the potential to disrupt their services.

Tom Talks is the internal communication system for staff at the University Health Network (UHN). The evaluation of the response to SARS undertaken by UHN showed that *Tom Talks* was by far the most popular source of information for UHN staff (even more than external sources such as the media): "The number of people that selected 'always' to *Tom Talks*, at 69%, is just under double the amount for the next three categories: the Manager/Supervisor (36%), email (35%) and UHN Intranet (33%). This indicates the huge success of this tool to communicate with staff."[17] It also shows the importance of leadership, responsiveness, visibility, and accessibility to staff in times of emergency.

> "*Tom Talks* is University Health Network's communication tool that allows Tom Closson, the President and CEO, to directly address all issues that are relevant to the organization. It is an e-mail, sent by Closson, to everyone at UHN who has an e-mail account – approximately 7,000 users – whenever there is an issue that affects most people at UHN. Following distribution, it is posted to UHN's intranet and then appears in a print version in the weekly newsletter. The e-mail is topical, timely and written in an informal style.
>
> *Tom Talks* is coupled with a *Tom Listens* area of the intranet which staff use to send Tom e-mails. All e-mails are answered by Tom, although the response is often an indication of where the e-mail has been directed so that the appropriate person at UHN can take responsibility for the follow-up. *Tom Talks/Tom Listens* was put in place when Tom arrived at UHN and was already established as a trusted, reliable and relevant source of information before SARS happened. It's value during SARS proved enormous and, for that period, it was also posted on the external site so employees at home, patients and others would know what was happening at UHN.
>
> The department of Public Affairs & Communications works with Tom to ensure that Tom Talks/Tom Listens is accurate, timely, relevant and written in a conversational tone. But, ultimately it is Tom's e-mail and he is responsible for sending it out."
>
> *Submitted to the Panel by Gillian Howard, Vice President,*
> *Public Affairs and Communication, University Health Network. Email. March 17, 2004.*

In the same evaluation, only 23% of staff indicated 'always' to the media as a source of information. It is noteworthy that in the first phase of our work, many healthcare workers reported that they often received the majority of information, including daily updates, from the media. The Panel believes that those organizations that were able to effectively respond in a timely manner to the information needs of their staff were likely to be the primary source of information for staff during the health emergency. Furthermore, these efforts were viewed as instrumental in reassuring staff of the organization's preparedness for the outbreaks.

The Panel commends healthcare organizations whose communications leadership was actively engaged to support the clinicians, caregivers, and staff working in their respective organizations. In the Initial Report, we highlighted a number of real disparities in terms of the proactiveness of hospitals' communications as well as concerns voiced in a number of interviews and submissions related to poor internal communications at the facility level. In balancing this view, we wanted to highlight one of the many efforts – namely, *Tom Talks* – that appears to have been highly effective.

The concluding lesson from this is clear: no matter how strong a central support is at the agency or corporate level, it is invaluable for healthcare organizations to have the mechanisms and systems in place that enable staff to access the latest information in a crisis, and to have approaches available to them to get their concerns and questions addressed. An agency will be no substitute for well organized internal capacity.

5. Quarantine Measures

As part of the Province's response to SARS, and when little was known about the disease or its mode of transmission, quarantine measures were widely implemented in an effort to stop the spread of infection. An individual who was potentially exposed to SARS was directed by public health officials to remain in quarantine for a period of ten days.

In general, compliance with quarantine measures by the public and healthcare providers was remarkable at the time. While there is ongoing debate about the extent of quarantine, it was recognized that quarantine was necessary during the outbreak to keep the disease under control.

Quarantine also identified a variety of areas that require further attention. In particular, we would like to draw attention to the areas of communication and physical and emotional supports. In planning for future outbreaks, service interruptions, and potential health emergencies, these key areas of support must be considered at the individual, local, and provincial levels.

For many, quarantine caused significant anxiety and social isolation. There were accounts of patients and families who experienced the painful emotional effects of being shunned and ostracized throughout and since their SARS experience. Quarantine affected every aspect of many peoples' lives – home, work (often with economic consequences), and social.

Although the experience of quarantine was varied, a consensus emerged from those interviewed about the need for better communication. Access to better and more timely information about quarantine guidelines as they relate to day-to-day activities and individual/family exposure was highlighted by many people.

The isolation associated with quarantine was often much more pronounced for those individuals who had no personal and professional supports available to them. The Panel learned that families and individuals received varying levels of support with respect to such things delivering meals and medications, and monitoring. This is hardly surprising given the sheer numbers of people who were required to go into quarantine. At the healthcare provider level, there were obvious gaps in the measures put in place to support quarantined staff among organizations. Some organizations put in place a significant number of supports for affected staff, other organizations put in place far less. Individuals who were in quarantine did not always have access to the most fundamental of services, such as grocery shopping, and delivery of medications. Specifically, the Panel encourages the Ministry to examine the issue providing physical and emotional supports as part of its ongoing preparedness planning for infectious disease outbreak circumstances or comparable emergencies.

While quarantine had rarely been used for many years prior to SARS, it is important to address the issue of what supports and/or payment/ compensation are appropriate. There are different philosophies on these matters. Ontario chose to provide financial support to recognize hardships of lost wages, and to reduce the barriers for people to stay in isolation. Short of being assured federal assistance, the Panel questions the extent to which a smaller jurisdiction would be willing to take this step, i.e. providing financial assistance. This raises the larger issue of the need to update and clarify how health emergency support funding should flow from the federal government to the provinces and territories. It is clear to the Panel that Disaster Financial Assistance Arrangements (DFAA) is a highly important vehicle when applied to a health emergency and that what is most at issue is the need for a consistent approach to any and all mechanisms instituted to address compensation and disaster relief in the event of a health emergency.

Health Human Resources

1. Capacity and Sustainability

In our Initial Report, the Panel raised a series of issues related to capacity and sustainability of Ontario's healthcare workforce. This included making recommendations on Ministry support for increased enrollment of key health professions, including medicine, nursing, and respiratory therapy; and on the need for enhanced training opportunities in epidemiology, medical microbiology, occupational health and safety, community medicine, critical care, emergency, and public health. We made additional recommendations that addressed specific staffing shortages in areas such as medical microbiology and occupational health and safety, as well as psychological support and compensation.

Since then we have undertaken further research into the causes of and potentially effective mechanisms to reduce casualization.[18] Although we have relied heavily on nursing-based statistics, we have drawn conclusions that we believe, through extrapolation, apply more generally to a number of other professions, such as respiratory therapists, occupational therapists, and physiotherapists.

"Vulnerabilities in the contemporary workforce stem from an ideology of staffing that has not moved on from restructuring in the 1990s, when employers used such strategies as redeployment, lay-offs and casualization in an attempt to create a cost effective health care system. Paradoxically, these strategies contributed to a dysfunctional workforce with an excessive reliance on casual workers. Today, casual work and multiple jobs persist in the health care workforce. Decision-makers continue to use a 'lean, mean' staffing strategy based on the assumption that workload fluctuates from relatively low to high rather than being consistently heavy. The result is a system characterized by routine understaffing, high rates of absenteeism and overtime. There is no surge capacity to meet peaks in the need for patient care. There is an ongoing need for more realistic models to describe and forecast optimum staffing requirements to create a system with the elasticity to deal with 'business as usual' and emergency situations. Full-time rates of employment in acute care have improved; however, there is still an over-dependency on agency staff and casual workers. The long-term care and home care sectors have high proportions of part-time and casual staff."[19]

The Panel acknowledged in the Initial Report the need to create a stable work force through maximizing full-time and minimizing casual employment. We recommended that 70% of staffing should be full-time workers. The Panel recognizes that cycles of surplus and shortage, and periods of casualization are typical of nursing. However, in further exploring the issue of casualization, we also learned the following (2003 data):[20]

- In GTA, 22.4% of nurses hold multiple jobs, including 24.7% of part-time RNs and 41.9% of casual RNs.
- Slightly more than 11% of nurses in Ontario and 16.8% of nurses in Toronto who have full-time jobs also work a second job.
- Two-thirds of nurses in not-for-profit long-term care and home care agencies and up to 90% in for-profit home care agencies are part-time.
- As a result of Ministry directives restricting workers to a single site during SARS, as many as 20-30% of nurses moved to acute care hospitals from the home care sector.

Through this further research, a number of possible strategies were raised to reduce some of the perceived negative effects of casualization, such as loss of continuity of care and insufficient surge capacity at the organization level. These include:

- creating a centralized and integrated resource team or float pool consisting of full-time employees;
- providing cross-training to give adequate back-up for contingencies. This could extend to the creation of specialized resource teams that include an infection control practitioner and that are based on the needs of a given facility;
- creating algorithms for the deployment of human resources as part of contingency planning;
- increasing base staff allocation so that staffing meets projected needs rather than minimal requirements. This should be coupled with human resource planning based upon sound evidence as to the costs of staffing strategies; and,
- creating workforce databases that can be used for planning and projection.

Ontario needs a healthy workforce; yet our current system is characterized by high rates of absenteeism and overtime. The system is also characterized by too few staff to respond to the need for surge capacity and a limited ability to respond in times of crisis without indirectly impacting other organizations or service agencies. It is in our collective interest to develop a health system with the necessary flexibility to respond to usual *and* sudden and unexpected demand.

We underscore our earlier conclusions and recommendations regarding the need for sufficient base-line staff, and the multi-year funding stability that may help the system achieve its objectives – namely, maximizing full-time staff opportunities while lowering dependence on overtime and casual workers.

We also encourage organizations to promote further team-based approaches to care and response in times of emergency. Based on the information we have to-date it also seems clear that formally incorporating infection control practitioner expertise into a broader team at the facility level provides greater opportunity for cross-training.

Since the writing of our Initial Report, the Panel has heard that the Ministry of Health and Long-Term Care and the Ministry of Training, Colleges and Universities have been working with key stakeholders to improve the opportunities for internationally educated health professionals to practice in Ontario. We encourage both ministries to continue their efforts to support qualified, internationally trained health professionals by removing barriers to registration so that it happens as quickly as possible, provided that the professionals are adequately trained. We also commend their efforts to-date to increase opportunities for International Medical Graduates (IMGs), by increasing Ontario's capacity from 100 to 200 annually and thereby supporting an increase in Ontario's capacity in health human resources. In addition, the Ministry needs to ensure that the province is educating sufficient graduates in health care to ensure a future workforce, and not relying solely on international recruitment in what is now a growing global issue of insufficient healthcare providers.

2. Occupational Health and Safety

The need for an increased awareness of and mechanisms to ensure employee health and safety within the healthcare environment was another area we highlighted in our Initial Report.[21]

We continued to examine this issue by bringing together a number of occupational health and safety (OHS) and infection control professionals in order to get additional insights into how the two groups managed to interact during SARS and what, if any, key changes organizations themselves could make to improve the link between these two groups of professionals.

Not surprisingly, we learned that supports for staff varied significantly among facilities. In some institutions there was poor follow-up with quarantined staff. In another facility, food and medicine were delivered to quarantined staff regularly. Most facilities appear to have maintained full salaries for quarantined staff.

We heard that staff should be trained in risk management, as a proactive support and confidence builder. This education should be linked to

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effective disaster and contingency planning. The information contained in a disaster plan must be communicated clearly and accessible to all employees in a timely way. Moreover, employees should receive regular compulsory education in disaster and contingency plans through e-learning or live teaching sessions. This education could possibly be tied to a certification process or other accountability mechanism.

We also heard that OHS could act as a high level source of employee safety information during an outbreak or health emergency as part of its role in protecting healthcare workers. This role would be determined based on the needs of employees.

Psychological supports for employees are also necessary. The Panel heard that existing Employee Assistance Programs are often not the full solution, and that there was a particular need during and especially post-SARS for improved psychological support services for individuals and family members, accessed through OHS. These could include using in-house psychiatry services and crisis intervention teams. Furthermore, any support model should normalize rather than destabilize the experience. Most importantly, employees should be able to utilize whichever process they prefer. Building on our recommendation in the Initial Report, any model ideally should include a psycho-educational component that mobilizes and enhances existing coping mechanisms.

A. Duty to Care

The Panel recognizes that all healthcare professionals have a duty to care for patients and many were praised as heroes during SARS. We also heard that we must avoid promulgating the myth that healthcare workers *must* be heroes. The Panel commissioned an ethical analysis of duty to care issues that provides a thoughtful analysis on the topic.[22] The report describes the circumstances that placed healthcare professionals at risk during the SARS outbreaks – risk that went beyond that of their own well-being and spilled over to their families, friends, and colleagues.

The report further describes the heroism exhibited by many healthcare professionals in Ontario during SARS as:

- doing the ordinary under extraordinary circumstances;
- going above the call of duty; and,
- placing one's health and well-being, and even his/her life, at risk.[23]

However, "unlike police and fire fighters who have an innate understanding of the dangers of their jobs, most healthcare workers had not previously considered illness and death as possible outcomes of working in their chosen professions."[24]

The authors conclude that while healthcare professionals have a duty to provide care to patients during a health emergency and in outbreak conditions, employers have a reciprocal duty to protect and support employees. The duty of employers encompasses such things as providing necessary and sufficient information to employees to fulfil their duty to care, providing necessary human resource supports, minimizing risks to the health of providers, and adequate supports for employees to safely perform their jobs.

The report stresses that "guidelines and policies related to the duty to care need to build on the positive experiences of certain values that were lived out during SARS, while concurrently avoiding the unfavourable outcomes of compromised or over-emphasized values."[25] Based on this analysis, the report includes a sample policy for duty to care in a public health emergency.[26] The Panel believes that this sample policy could be helpful to the Ministry and to healthcare workers and employers, from the perspective of the issues raised, the related analysis, and the sample policy itself.

3. Students

Our Initial Report highlighted a series of issues that relate to residents and students and the interruption to their clinical education during SARS.

The Panel acknowledges and commends the extensive work of the Clinical Placement Advisory Committee, established in July 2003. The Panel encourages the dissemination and discussion of the Committee's thoughtful and balanced report together with its recommendations.[27]

The Panel also encourages facilities to review and consider the decision tree proposed by the Committee as part of contingency planning for a facility outbreak. Figure 2 is presented at the end of this chapter. Specifically, the decision tree attempts to succinctly balance the need and desire of many medical students to learn by experience, even in emergency conditions, in a healthcare institution, with the ability of that institution to be equipped to handle the student(s) at times of health crises. The approach suggested by the Panel is a careful attempt to link an assessment of risk and need, and to provide a decision guide for deployment. The basic principles behind this tool can clearly be applied in local, facility-specific outbreaks as well as to the broader health emergency situations.

Lastly, and further to recommendations made in our Initial Report, we encourage the Ministry to ensure that appropriate protocols are in place to communicate with educational institutions to ensure that information is disseminated in a timely way to students during an outbreak or health emergency.

Figure 1: Sample Visitor Policy for a Public Health Emergency

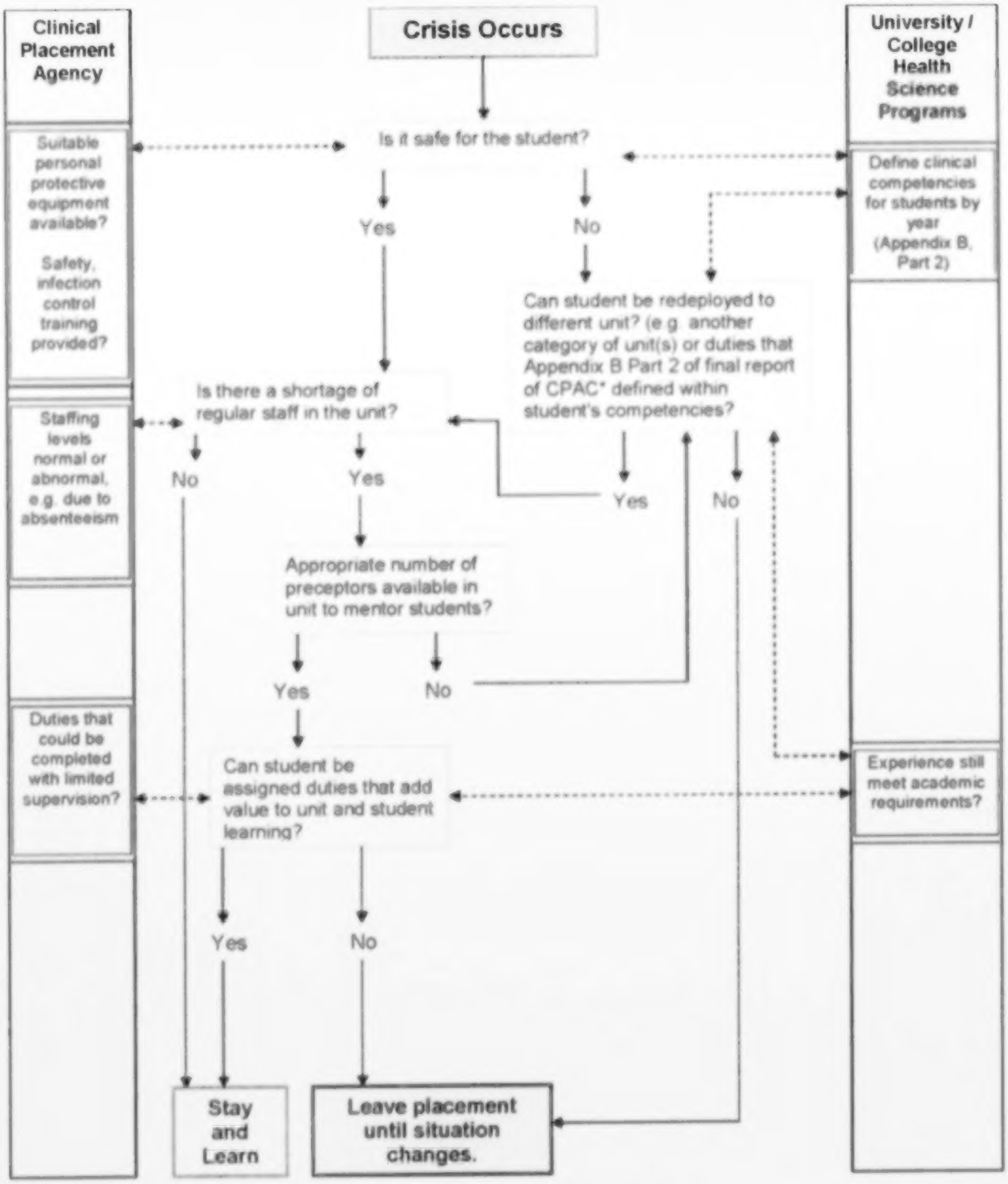
Patient categories	No of visitors	Length of visitation	Exception to policy
Is the patient terminally ill or imminently dying?	immediate family and/or significant others*	unlimited	1. If the risk of contagion from the patient is low, visitation may be extended to other family members and friends on a limited basis.**
Is the patient critically ill (i.e., intensive care unit)?	immediate family and/or significant others*	as per intensive care unit policy	1. If the risk of contagion from the patient is low, visitation may be extended to other family members and friends on a limited basis.**
Is the patient a pediatric patient?	parents	unlimited	1. If the risk of contagion from the patient is low and the length of stay is greater than 2 weeks, visitation may be extended to other family members (e.g., siblings) and friends on a limited basis.**
Is the patient in labour or postpartum?	partner or significant other*	unlimited	1. None
Is the patient undergoing a serious or significant procedure/ treatment (e.g., open heart surgery, chemotherapy, cardiac catheterization)?	partner or significant other*	limited to 2 hours before, length of procedure/treatment, and 2 hours following procedure/treatment	1. If the risk of contagion is low and the length of stay is greater than 2 weeks, visitation may be extended to partner or significant other* on a limited basis.**
Is the patient a long-term care resident?	partner or significant other*	limited to maximum of 2 hours per week at a time specified by hospital/unit	1. None
Is the patient's ability to understand what is happening limited due to language, other communication barriers or decreased capacity?	partner or significant other*	limited to maximum of 2 hours per week at a time specified by hospital/unit	1. None
All other patients	no visitors		1. If the risk of contagion is low and the length of stay is greater than 2 weeks, visitation may be extended to partner or significant other* on a limited basis.**

Source: Markwell, Godkin . Visitor restrictions during a public health emergency; ethical issues and guidelines for policy development, 2004.

* as defined by the patient or substitute decision maker (SDM) if appropriate; if the patient or SDM is uncomfortable and does not wish to inform friends and family members that they are restricted from visiting, this responsibility should be assumed by the appropriate healthcare provider in the institution

**limited basis: 2 hours per week at a time specified by hospital/unit

Figure 2: Decision Tree—Outbreak Management of Students on Clinical Placements


Clinical Placement Agency
Suitable personal protective equipment available?
Safety, infection control training provided?
Staffing levels normal or abnormal, e.g. due to absenteeism
Duties that could be completed with limited supervision?
Crisis Occurs
Is it safe for the student?
Yes
No
Can student be redeployed to different unit? (e.g. another category of unit(s) or duties that Appendix B Part 2 of final report of CPAC* defined within student's competencies?
Is there a shortage of regular staff in the unit?
No
Yes
Yes
No
Appropriate number of preceptors available in unit to mentor students?
Yes
No
Can student be assigned duties that add value to unit and student learning?
Yes
No
Stay and Learn
Leave placement until situation changes.
University / College Health Science Programs
Define clinical competencies for students by year (Appendix B, Part 2)
Experience still meet academic requirements?

Source: Clinical Placement Advisory Committee (CPAC), 2004

Recommendations

Health System Impact

63. The Ministry should be encouraged to formalize post-event evaluations using comprehensive and appropriate health system/service data to refine on an ongoing basis:

    a. provincial and local approaches to outbreaks and health emergencies; and,

    b. approaches to system recovery based on scientific and clinical evidence related to patient outcomes and access to health services e.g., returning healthcare institutions to pre-event operations.

Critical Care

64. The Ministry should develop an enhanced evidence-based approach to measure and monitor surge capacity and to ensure critical care accessibility to Ontario's critical care resources during periods of sudden and unexpected demand (surge) and usual demand.

Visitor Policy

65. The Ministry should, in collaboration with the Ontario Hospital Association, Ontario Long-Term Care Association and Ontario Association of Non-Profit Homes and Services for Seniors and other appropriate associations, establish guidelines for developing policies regarding visitor restrictions during a significant service interruption or public health emergency. The sample visitor policy included in this Report may be used to inform this process. Policies developed should recognize the importance of social support and should differentiate between visitors and access to key family members who are integral to the provision of patient care. There should be mechanisms to address exceptional circumstances.

66. The Ministry should, in collaboration with relevant associations, support the provision of clear and consistent information about visitor restrictions when these are in effect on a large scale and ensure that the rationale for these is made available to the public through appropriate vehicles.

Quarantine

67. Public health officials should ensure that during any period of quarantine, regardless of the scope, that there is formal and regular two-way communication between Public Health Units and individuals and families under quarantine.

68. The Government of Ontario, as part of collaborative work with the federal government in relation to providing financial assistance during a public health emergency, should develop policies concerning appropriate compensation for individuals under quarantine.

Communications

70. As part of the Ontario Health Protection and Promotion Agency, a Public Health Alert Network (PHAN) should be established and maintained to issue different types of health messages (alert, advisory, update) to key stakeholders based on agreed protocols. The Ontario Health Protection and Promotion Agency would activate PHAN on the direction of the Chief Medical Officer of Health as a means of supporting crisis and emergency response as well as preparedness at the local and provincial levels.

73. The Ontario Health Protection and Promotion Agency should provide risk communications support and advice to the Ministry, Public Health Units, and other local healthcare providers and organizations including the Regional Communicable Disease and Infection Control Networks. To this end, the Ontario Health Protection and Promotion Agency should:

- support the Ministry of Health and Long-Term Care by providing technical and scientific advice regarding risk communications in general and with respect to specific topics or issues; and,

- establish and maintain a Risk Communications Network with the aim of increasing practitioners' (public health and communication) capacity to undertake and evaluate risk communication activities.

77. The Ministry should ensure that each Public Health Unit maintains core communications capacity that includes:

   a. public health risk communications;

   b. crisis communications during a health emergency as part of overall contingency planning;

c. production and dissemination of public health materials;

d. translation as determined by local need and coordinated with the Agency;

e. participation in local and provincial networking opportunities for health communicators, such as a Risk Communications Network; and

f. media relations.

78. Public Health Units should also be appropriately supported to develop processes and mechanisms at the local level to network and share information with other health communicators.

81. An ongoing process and mechanism should be developed to disseminate information to stakeholders including surveillance and epidemiological information, research, best practice information, etc. The Ontario Health Protection and Promotion Agency will develop and support an Ontario Public Health Information System to enable this information sharing, with the aim of providing a specific portal to epidemiological and surveillance information as well as with analysis and trend information (including specific reports) to support practitioners and decision-makers.

Health Human Resources

90. As part of the employment strategies to reduce the effects of casualization of the healthcare workforce, approaches such as creating centralized and integrated resource teams comprised of full-time employees, providing opportunities for cross training, increasing base staff allocation, and creating workforce databases should be considered.

93. Appropriate ministries within the Government of Ontario, in collaboration with relevant professional associations, should develop and/or disseminate clear shared guidelines regarding duty to care obligation of both employers and healthcare workers during a public health emergency. A sample duty to care policy included in this Report may be of use to inform this process.

94. Appropriate ministries within the Government of Ontario should support and encourage health care employers to develop necessary supports for employees as part of contingency planning for a health emergency. These should include appropriate education with respect to assessed risk, clear communication of disaster plans, and adequate psychological support services.

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Chapter Four: Plan for Action

The following provides a consolidation of the Panel's recommendations put forth in the Initial Report and in this Final Report. Final Report recommendations are highlighted in bold. It should be noted that this consolidation does not highlight or give credit to the work already undertaken by the Ministry, provider organizations, and at the federal level to begin to move in a range of areas. Rather, this list is our final list of recommendations provided to the Government of Ontario in fulfillment of our mandate.

To assist in providing an overall vision of the broad and complex area of public health renewal contained in both of the reports, recommendations encompassing public health models, infection control, and communications have been further articulated into a three-year implementation plan. Thus, in essence, a plan for revitalizing public health is proposed.

We have also put forward some estimated costs for implementation of both our interim and final recommendations as they are outlined here. We caution that these estimates are preliminary and should be further refined as implementation details are worked out and as a better assessment of available federal support becomes available.

A. Full Recommendations

The recommendations from the Initial Report have been renumbered sequentially to incorporate the new recommendations put forth in this Final Report. We have indicated in the box to the left of the Initial Report recommendations the original numbering, so that they may be easily referenced.

Therefore, this is the final and complete list of recommendations provided to the Government of Ontario in fulfillment of our mandate.

Public Health Agency Design

Health Protection and Promotion Agency

Rec #1 Initial Report

1. The Ministry should immediately proceed with developmental work to establish a Health Protection and Promotion Agency in Ontario. The Agency should be required to report annually to the legislature through the Chief Medical Officer of Health and include the following core components:

   a. the Ontario Public Health Laboratory;
   b. relevant existing Public Health provincial resources; and,
   c. a Division of Infection Control, whose mandate would include research, training, monitoring and best practice dissemination.

   The Agency should also be designed to enable linkages with the proposed Canadian Public Health Agency, the proposed National Public Health Laboratory Network, and appropriate research centres.

Agency Structure and Mandate

New

2. The Ministry should proceed with the establishment of an Ontario Health Protection and Promotion Agency that will be established and appropriately authorized through legislation as an agency of the Ministry of Health and Long-Term Care and with the following mandate:

   - to promote and protect the health of the people of Ontario, by generating timely and accurate scientific, laboratory, and epidemiological services, and providing expert advice and support on measures to improve the health of Ontarians; and

- to translate evidence and research into practical and effective assistance, tools, advice, and support to healthcare providers in Ontario.

New 3. The Ontario Health Protection and Promotion Agency should report to the Chief Medical Officer of Health who shall set strategic direction and also sit as an ex-officio member of the Agency's Board. A Chief Executive Officer, reporting to the Chief Medical Officer of Health, should be appointed to provide scientific direction and run the Agency on a day-to-day basis.

Core Functions

New 4. The core functions of the Ontario Health Protection and Promotion Agency, as outlined in the Report, should encompass:

   a. Communicable disease and infection control
   b. Public Health Laboratory
   c. Emergency preparedness and support
   d. Health promotion and injury prevention*
   e. Research/knowledge transfer
   f. Epi Centre and surveillance
   g. Library services and supports
   h. Communications

   * A full plan for appropriate incorporation should be brought forward by the Agency in Year 3 of operations.

New 5. The Central Public Health Laboratory should be co-located with the proposed Ontario Health Protection and Promotion Agency, and to the extent possible, examine appropriate partnership opportunities among the central Public Health Laboratory and appropriate academic health sciences centres while retaining the organizational integrity of the Central Public Health Laboratory. These opportunities could range from formalized agreements on surge capacity to potential collaboration on a broader scale.

New 6. The Ministry should conduct a review of the Public Health Research, Education and Development Program (PHRED) with the potential to expand both the research and training components.

New

7. Within three years of its establishment, the progress of the Ontario Health Protection and Promotion Agency should be externally evaluated.

Key Success Factors

New

8. The Ontario Health Protection and Promotion Agency should be based on the following key success factors as outlined in the Report:
   - transparency
   - accountability
   - anchoring a multi-disciplinary team of experts
   - integrity and credibility
   - cross-sectoral support
   - partnerships
   - resource and service culture

New

9. The Ontario Health Protection and Promotion Agency should be directed to prepare or assist in the preparation of annual reports. These include:
   - Report on the Health of Ontarians (potentially bi-annually)
   - Public Health Performance Report
   - audit report
   - Agency performance plan
   - infection control status reports

   These reports should be released publicly within 30 days of providing them to the Chief Medical Officer of Health.

New

10. The federal government, First Nations leaders, and the Ontario Ministry of Health and Long-Term Care should initiate discussion on a formal protocol relating to public health emergencies at the First Nations level with a view to completing a protocol within one year.

New

11. Ontario should vigorously pursue opportunities for co-location and collaboration between the proposed Canadian Public Health Agency and the Ontario Health Protection and Promotion Agency.

Agency Governing Board

New

12. A formal board structure should be adopted to oversee the financial and operational objectives of the Ontario Health Protection and Promotion Agency. Membership should reflect a suitable breadth of skills and representation. Core membership of the board should include at minimum, expert representation in the following areas:
    - laboratory
    - hospital sector
    - community provider
    - governance experience
    - public health
    - cross-appointment with federal government

    In addition, a minimum of one seat should be available for a public representative. Final board member determination should be made by the Minister of Health and Long-term Care, solely from a list of potential board members nominated or submitted through a transparent nomination process finalized by an external expert body. Members of the board should serve for fixed but staggered terms and be appointed by Order-In-Council.

    The first chair of the board shall be appointed by the Minister of Health and Long-Term Care on recommendation of the Chief Medical Officer of Health for a fixed term of up to five years.

Agency Founding Legislation

New

13. Ontario should develop founding legislation for the Ontario Health Protection and Promotion Agency and a detailed Memorandum of Understanding outlining the linkages to the Ministry, Emergency Management Ontario, and other relevant partners that shall at a minimum:

    - Entrench the role and structure of the proposed Ontario Health Protection and Promotion Agency including appropriate safeguards to ensure integrity and authority to ensure research products and reports are publicly released within a maximum of 30 days of being presented to the Chief Medical Officer of Health in the event that they have not otherwise been made public.

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- Provide the Ontario Health Protection and Promotion Agency with the appropriate legal authority to collect, use, and disclose personal health information necessary for the Agency to perform the duties required to fulfill its mandate.

- Entrench the requirement for the Ontario Health Protection and Promotion Agency to produce and publicly disseminate an annual agency performance plan articulating goals and performance measures and progress made on an annual basis.

- Require the Ontario Health Protection and Promotion Agency to produce an annual audit that shall be tabled by the Minister at the earliest and appropriate time and subsequently with the Legislature.

Staged Implementation

New

14. Initial functions of the Ontario Health Protection and Promotion Agency should be implemented as outlined in the staged implementation section of the Report. These areas of focus include:
    - surveillance coordination and strategic planning
    - epidemiological analysis
    - public health laboratory
    - research and knowledge transfer
    - communications

New

15. The following interim steps should be taken in preparation for the transition of Central Public Health Laboratory capacity to the Ontario Health Protection and Promotion Agency:

    - The Ministry's Public Health Division should immediately hire dedicated laboratory liaison staff within the Division to work directly with the Central Public Health Laboratory to formalize and build improved linkages between the laboratory component and the surveillance and epidemiology components currently housed within the Ministry.

    - At the Central Public Health Laboratory level, senior medical leadership, at the M.D. or PhD level, should be recruited. A formal liaison function should be established to liaise with the Public Health Division.

- In addition to the need for securing a minimum of two senior medical microbiologists and medical director (as identified in the Panel's Initial Report), the Ministry should commit to adding an additional two medical microbiologist positions (for a total of four new positions) within the next 12 months.
- A video-conferencing link should be implemented between the Public Health Division in the Ministry and the Central Public Health Laboratory.
- A joint planning body should be established between the Public Health Division and Laboratories Branch within the Ministry, drawing on appropriate external expertise as required.
- A formal operational review of the Public Health Laboratory system should be undertaken focusing primarily on:

  a. identifying and defining the core testing services and mechanisms required to focus and tailor the testing of the Public Health Laboratory system to those of core Public Health Laboratory importance; and,

  b. determining what functional and procedural enhancements are required to ensure that the Public Health Laboratory system is able to perform at optimum level during both outbreak and non-outbreak situations. Components that should be examined include the need for technology supports, business processes and medium and long-term medical and scientific capacity requirements.

Independence of the Chief Medical Officer of Health

Rec #2 Initial Report

16. The Ministry should immediately amend the *Health Protection and Promotion Act* to provide clear authorization to the Chief Medical Officer of Health to:

a. report to the legislature; and,
b. issue public comment on matters of significant public health importance independently of the Minister of Health and Long-Term Care.

Such a provision should be enacted at the earliest possible opportunity.

New

17. The *Health Protection and Promotion Act* should be amended to provide the Chief Medical Officer of Health with the following protections:

    a. "The authority for the Chief Medical Officer of Health to issue public comment, including comment to the Legislature where required, without prior authorization by the Minister but where in the opinion of the Chief Medical Officer of Health, public health urgency requires action."

    b. "The authority for the Chief Medical Officer of Health to issue such research or reports, which in the opinion of the Chief Medical Officer of Health are pertinent to promoting awareness of issues pertaining to ongoing or emergent threats to the health of Ontarians and/or the capacity of the province to respond to such threats. Outside of cases of health urgency, the Minister shall be provided by the Chief Medical Officer of Health with a review period of not more than thirty days of such material prior to public release."

Public Health Human Resource Revitalization Strategy

Rec #3
Initial
Report

18. It is recommended that Ontario immediately initiate discussions with the Association of Local Public Health Agencies (alPHa), Association of Municipalities of Ontario (AMO), and existing federal/provincial/territorial (F/P/T) processes, to design a Public Health Human Resource revitalization strategy. The strategy should contain the following components:

    a. The development, through the Ministry of Health and Long-Term Care and the Ministry of Training, Colleges and Universities, of an increased capacity for the education and training of public health professionals. This could include increasing enrollment numbers at educational institutions as well as increasing post-graduate training positions or residencies.

    b. The development and support of a provincially funded training and education program for existing public health staff, with a focus on infection control. This should build upon the existing Public Health Research, Education and Development (PHRED) program. Special emphasis should be placed on promoting cross-training opportunities between public health, acute care, long-term care, and other sectors.

c. The development, in partnership with HRDC and educational institutions, of a comprehensive campaign to promote public health careers in Ontario.

d. The development of re-entry training positions in community medicine such that practitioners currently practicing in other specialties can become qualified to work in public health.

e. The development of bridge training programs intended to update the skills and qualifications of skilled individuals with previous public health experience. This should be offered together with incentives to recruit back such individuals currently practicing in other fields.

f. A review of recruitment and retention strategies for Medical Officers and Associate Medical Officers of Health, including remuneration.

The Ministry should provide a progress report on this strategy to the Minister by June 1, 2004.

Provincial/Municipal Funding

Rec #4 Initial Report

19. Ontario should immediately dedicate 100% provincial funding beyond March 31, 2004 for the 180 positions committed to Public Health Units as part of the Ontario SARS Short-Term Action Plan.

Ontario should further develop an independent process and establish timelines for the establishment of 100% funding of all communicable disease programs in public health. This should be completed by December 31, 2004.

All such funding should be conditional on the Public Health Units supporting re-deployment of these communicable disease resources in the event of a public health emergency, as part of constructing province-wide public health surge capacity.

Rec #5 Initial Report

20. Ontario should immediately re-structure the existing cost-sharing agreement for public health with the municipalities to move to between 75% and 100% provincial funding of public health. Programs, including communicable disease programs funded at 100% by the province should be protected at 100%.

Implementation of the new cost-sharing agreement should be phased in within two to five years.

Public Health Units

Rec #6
Initial
Report

21. The Ministry should review, in conjunction with the Medical Officers of Health, the Association of Local Public Health Units and the Association of Municipalities of Ontario, the existing number of public health agencies in the province. Within two years, the Ministry should act on the results of the review to consolidate the number of Public Health Units to between 20 and 25 units, retaining local presence through satellite offices.

Public Health Unit Level

New

22. The Ministry should commission a review of existing local Public Health Units. The review should incorporate expert input, and comparisons to appropriate jurisdictions to:

    - determine the required core capacities to be available at the health unit level, based upon core geographic, health status, health need, cultural mix, and core health determinants;
    - identify key operational, systemic, and governance barriers that contribute to or may impede the successful functioning of local health units; and,
    - recommend appropriate models of health unit consolidation where such consolidation is rational based upon the evidence generated above and would contribute to strengthening local public health resources.

Health Protection and Promotion Act – Compliance

Rec #7
Initial
Report

23. The Ministry should immediately examine approaches to strengthen compliance with the Health Protection and Promotion Act and associated *Mandatory Health Programs and Services Guidelines*, in particular with regard to the resourcing and provision of mandatory health programs and services.

New

24. As part of the review of the *Mandatory Health Programs and Services Guidelines* for public health, it is recommended that consideration be given to the inclusion of public health risk communications as one of the program standards.

Public Health Division Capacity Review

Rec #8 Initial Report

25. The Ministry should immediately undertake a comprehensive external review of existing provincial Public Health Division capacity. The Ministry should act on recommendations arising from this review to revitalize provincial public health capacity within the context of public health renewal.

Performance Review for Public Health

Rec #9 Initial Report

26. Ontario should establish an annual performance report for public health in Ontario to be tabled to the legislature and disseminated to the public. This report should be prepared by an appropriate third-party research organization body and should indicate the status of the following areas:
    a. human resources
    b. information technology
    c. facility-acquired infections
    d. mandatory program and service compliance
    e. health of the population
    f. central epidemiological capacity

Communicable Disease and Infection Control

Standards, Accreditation and Monitoring

Rec #11 Initial Report

27. The Ministry should immediately establish a standing Provincial Infection Control Committee that would report to the Chief Medical Officer of Health. The Committee would have the following functions:

    a. Supervise audits already underway of hospital infection control policies, programs and resources, and undertake additional audits in remaining Ontario healthcare facilities and organizations, to be completed by the summer, 2004.

    b. Informed by the results of these infection control audits, develop comprehensive provincial infection control standards for all healthcare facilities in Ontario, including acute and non-acute care hospitals, long-term care facilities, and primary care/community settings. Guidelines should be completed by October 31, 2004.

    c. Develop standards in collaboration with Health Canada.

    d. Develop appropriate mechanisms to ensure compliance for both existing infection control standards and new comprehensive provincial infection control standards.

Rec #12
Initial
Report

28. The Ministry, together with the Provincial Infection Control Committee, and in conjunction with the Ontario Hospital Association, the Institute for Clinical Evaluative Sciences (ICES), and the Community and Hospital Infection Control Association, should develop core indicators for monitoring facility-acquired infections. This data should be reported as part of the annual status report on public health.

Provincial Communicable Disease Committee

Implementation and Reporting

New

29. The standing Provincial Communicable Disease Committee should be in place by June 30, 2004. Necessary subcommittees should also be created, including a Provincial Infection Control Subcommittee. The terms of reference of the Provincial Communicable Disease Committee should take into account and incorporate, as appropriate, the mandate and membership of the Advisory Committee on Communicable Diseases.

New

30. The Provincial Communicable Disease Committee should initially report to the Chief Medical Officer of Health and transition to reporting to the Director of the Department of Communicable Disease and Infection Control within the Ontario Health Protection and Promotion Agency once it is operational.

New

31. The Provincial Communicable Disease Committee should establish communication pathways and protocols with the Regional Communicable Disease and Infection Control Networks that are bi-directional in nature. These pathways and protocols should be capable of integrating with other communication and information technology supports created as part of the infrastructure of the Ontario Health Protection and Promotion Agency, as appropriate.

New

32. The Provincial Communicable Disease Committee should establish a dedicated webpage, with access by the public as well as by healthcare providers. The webpage should post all approved standards and guidelines as well as those under development, in addition to any relevant advisory statements.

Membership

New

33. The first chair and core members of the Provincial Communicable Disease Committee should be appointed for fixed but staggered terms by the Minister of Health and Long-Term Care upon the recommendation of the Chief Medical Officer of Health through a transparent nomination process. Once the Ontario Health Protection and Promotion Agency is established, appointment should be through the Board of Directors of the Agency.

    Core membership of the Provincial Communicable Disease Committee should include at a minimum representation from:
    - infection control
    - infectious disease
    - microbiology
    - occupational health and safety
    - public health
    - epidemiology

    with both acute care and non-acute care interests represented.

    Non-core membership of the Provincial Communicable Disease Committee should include the Chief Medical Officer of Health and at least one representative from the Regional Communicable Disease and Infection Control Networks, such as the chair of a Regional Coordination Committee.

Functions and Mandate

New

34. The initial mandate of the Provincial Communicable Disease Committee should be to establish standards and guidelines for infection control applying evidence-based best practices.

    a. The first infection control standards and guidelines to be developed by the Provincial Communicable Disease Committee should:

        - articulate the core foundational elements for comprehensive infection control programs within acute and non-acute facilities;

        - address the necessary human resources and skill sets to implement comprehensive infection control programs; and,

- address infection control training at a facility level, including where appropriate the development of standardized educational materials in conjunction with trained educators.

As a supporting measure, the Ministry must immediately increase and fund education programs in infection control and must develop additional strategies to recruit infection control professionals.

b. The Provincial Communicable Disease Committee should, through phasing in of the second portion of its mandate, develop standards and guidelines relating to specific infection prevention and control practices, such as:
  - handwashing techniques
  - cleaning and disinfection protocols
  - specific surveillance programs
  - isolation techniques
  - proper use of personal protective equipment
  - facility design, including emergency room design

c. The Provincial Communicable Disease Committee should, through phasing in of the third portion of its mandate:

  - establish core indicators to be reported by each type of facility across Ontario;

  - develop self-audit and peer audit systems for use by facilities and organizations;

  - develop model infection control protocols or programs as appropriate and as required;

  - advise the Ministry and/or the Ontario Health Protection and Promotion Agency on infection control and communicable disease research priorities for Ontario; and,

  - advise the Ministry on relevant infection control and communicable disease policy.

New 35. At the request of the Chief Medical Officer of Health, the Provincial Communicable Disease Committee should begin to act as an advisory body to the Ministry on specific issues, such as refining a pandemic influenza plan for Ontario and issuing advisory statements related to infection control and communicable disease issues.

Regional Communicable Disease and Infection Control Networks

Rec #10 Initial Report

36. The Ministry should establish a process to develop Regional Infection Control Networks across Ontario with a designated hospital and Public Health Unit as joint leads in the development process. The networks should include but not be limited to Public Health Units, hospital infection control practitioners, Emergency Health Services, long-term care, and community-based healthcare providers.

Mandate

New

37. Each Regional Communicable Disease and Infection Control Network should include the following core activities as part of its mandate:

- identify existing infection control resources and practices within the region to determine core capacity and determine gaps;
- assist network members in implementing standards and guidelines developed by the Provincial Communicable Disease Committee;
- coordinate surveillance of core indicators;
- support activities of Public Health Units as these are mandated under the *Health Protection and Promotion Act;* and,
- report regional data and information centrally.

Membership

New

38. Membership in each Regional Communicable Disease and Infection Control Network should occur at the facility or organization level, and include at a minimum:
    - acute and non-acute care hospitals
    - long-term care facilities
    - Public Health Units

Additional membership by laboratories, ambulance services, and community-based services and providers is to be encouraged as network capacity and infrastructure develop.

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Implementation

New

39. The Ministry should immediately commit to appropriate funding for the regional network initiatives already underway in Ontario. Further dedicated funding should be set aside immediately toward the development of additional networks across the province, as part of a multi-year plan for the implementation of networks on a province-wide basis. This funding should be part of a targeted funding envelope.

    a. Building upon a review of the experiences of the preliminary network initiatives, the Ministry and networks under development should draw resources and learnings to support the subsequent refinement of networks across the province.

    b. As an enabler and preliminary step to the development of Regional Communicable Disease and Infection Control Networks across Ontario, the Ministry should immediately sponsor additional planning sessions that bring together relevant stakeholders from acute care and public health, among others.

New

40. Regional stakeholder organizations integral to the development and implementation of Regional Communicable Disease and Infection Control Networks should commence with the following activities, through phasing in of each network's mandate:

    a. Establishment of a steering committee for each network with core membership to include at a minimum the following:
        - acute care lead organization
        - Public Health Unit(s)
        - infection control practitioners
        - physician experts
        - microbiology
        - occupational health and safety
        - the regional coordinator
        - the medical director

    b. Selection of an appropriate acute care lead organization. Public Health Units should maintain their lead status on matters that clearly fall within their legislated mandate, such as the creation of outbreak response plans, and Communicable and Reportable Diseases surveillance, investigation, and response.

c. Development of a local vision and operational plan by the steering committee.

d. Designation of projected network boundaries taking into account the following factors in defining the boundaries of the Regional Communicable Disease and Infection Control Networks:

- location and amount of core capacity in infection control expertise;
- rational patterns of patient movement, including referral patterns;
- existing service clusters;
- demographics to be served by the network, including population and bed number; and,
- core geographical boundaries

e. Submission of the operational plan to the Ministry for funding.

New

41. A mechanism should be established to ensure that all Regional Communicable Disease and Infection Control Networks are able to communicate and link with one another.

Facility Design

Rec #13 Initial Report

42. To ensure the appropriate supply and distribution of negative pressure rooms between and within hospitals, the Ministry should immediately undertake an independent evidence-based needs assessment, reporting back to the Minister by March 1, 2004. Informed by the results of this assessment, the Ministry must ensure that there is a sufficient supply of negative pressure rooms on a regional basis.

New

43. The evidence-based needs assessment should be undertaken using standards and guidelines developed through the Provincial Communicable Disease Committee. As an additional support to the needs assessment, the Ministry should develop and maintain a current inventory of the number and location of all existing negative pressure and isolation rooms in Ontario.

New 44. Upon the completion of clear standards for infection control in facility design and a review of existing capacity, it is proposed **that the** Ministry establish a specific dedicated fund of one-time costs, increasing from $10m in Year 2 to $40m in Year 4, to address priority remediation requirements. Criteria for prioritization should be set based on recommendations from the PCDC and/or appropriate sub-committees.

New 45. The Ministry, through the Ontario Health Technology Advisory Committee, the Medical Advisory Secretariat, and additional relevant external expertise, should immediately establish a process to evaluate the appropriate use and effectiveness of new technology applicable to isolation precautions, such as portable air filtration units and portable single patient isolation units.

Rec #14 Initial Report 46. The Ministry must initiate a collaborative process with the Ontario Hospital Association to identify hospital physical plant barriers to effective infection control and develop a multi-year implementation plan for their removal. Emergency rooms should be examined as a first priority, to be followed by intensive care units and wards.

Training and Orientation

Rec #15 Initial Report 47. The Ministry, in conjunction with the Ministry of Training, Colleges and Universities, should ensure adequate funding for the expansion of existing courses in infection control so that they can be made more widely available and accessible to all health professionals. This funding should encompass the:

a. development of an online format for the existing course
b. development of distance education initiatives
c. provision of adequate reimbursement for the costs of attending or participating in such a course.

Such funding should be in place April 1, 2004.

Rec #16 Initial Report 48. The Ministry must immediately develop strategies to achieve a minimum target of one infection control practitioner per 250 acute care and long-term care beds, and to work toward achieving a target of one infection control practitioner per 120 acute care and long-term care beds within three years. These strategies must include mechanisms for recruitment and retention of infection control practitioners.

Rec #17 Initial Report 49. The Ministry should support the development of 'train the trainer' initiatives by providing adequate funding to allow existing experienced and qualified infection control practitioners to act as educators of other healthcare professionals in infection control principles. The necessary level of such funding should be determined and made available by April 1, 2004.

Rec #18 Initial Report 50. The Ministry should actively engage and support regulatory bodies and professional associations in their review and updating of standards for the infection control education and maintenance of core competencies of all healthcare workers. The Ministry should also work to develop standardized educational programs that reflect these principles. The development of such standards should be complete by June 30, 2004.

Rec #19 Initial Report 51. The Ministry, the Ministry of Training, Colleges and Universities, the Council of Faculties of Medicine, the Canadian Association of Schools of Nursing, and other relevant bodies should work together to define core curricular elements of infection control education for all healthcare education programs and begin steps to establish these elements within such programs. The Ministry should establish a working body to accomplish these goals by February 1, 2004, and curricular outlines should be in place by June 30, 2004.

Funding of Infection Control Programs

Rec #20 Initial Report 52. The Ministry, in collaboration with the Ontario Hospital Association, the Ontario Long Term Care Association, and the Ontario Association for Non-Profit Homes and Services for Seniors, should develop mechanisms to provide targeted funding for infection control programs within facilities and organizations, such as the development of a hospital Priority Program for infection control. This funding should provide for necessary human resources, such as infection control practitioners and infectious disease specialists. A status report on the development of these mechanisms should be provided to the Minister by June 30, 2004.

Emergency Preparedness

Rec #21 Initial Report

53. The Ministry should immediately create an Office of Health Emergency Preparedness (OHEP) with appropriate staffing and authority and with a formal link with the Ministry of Community Safety and Correctional Services. The office should be established by April 1, 2004 and should:

    a. report to the Deputy Minister through a Health Emergency Preparedness Committee. The Committee should oversee the establishment of the office and its mandate, and provide ongoing advice and strategic direction for the OHEP;

    b. provide leadership with respect to the Ministry's emergency preparedness activities; and,

    c. ensure implementation of the recommendations below within the timelines stipulated. Until such time as the OHEP is operational, the Ministry must act on these recommendations in its place.

54. Once established, the OHEP should act as the Ministry liaison with Health Canada, Emergency Management Ontario, and other relevant organizations regarding public health emergency preparedness. Specifically, the OHEP should begin to work closely with Health Canada in three areas:

    a. Ensuring the relevance and readiness of any emergency stockpile system and of appropriate provincial linkages and protocols as required for the purposes of coordination.

    b. Developing the Health Emergency Response Team program.

    c. Harmonizing federal and provincial emergency preparedness and response capacities for public health emergencies.

Rec #23 Initial Report

55. The Ministry should move promptly to review and assess specific areas of emergency preparedness, and create action plans and recommendations through advisory committees with clinical and operational expertise. The key areas for review and assessment are:

    a. The development of emergency protocols for patient transfer, including an objective evaluation of the Patient Transfer Authorization Centre system.

    b. A review of the accuracy and utility of the CritiCall Program. This should include an analysis of the role that the CritiCall Program and Central Bed and Resource Registry could play in the management of future outbreaks and the checks or mechanisms required to ensure data accuracy.

c. The development of formal emergency protocols for rapid discharge of hospital Alternate Level of Care patients from hospital to alternative sites, specifically long-term care facilities. This should include a review and analysis of the use of the category 1A crisis designation under the regulatory provisions governing the placement coordination system under long-term care legislation.

d. Provincial, regional, and institutional capacity to obtain and distribute supplies and equipment during infectious disease outbreaks and other public health emergencies.

The Ministry should report the results of the review and present the accompanying action plans to the Minister by March 1, 2004.

Rec #24 Initial Report

56. Once the OHEP is established, it should have a dedicated website to raise public awareness and promote the transparency of the Ministry's preparedness activities. The OHEP should use this website to post reference documents, appropriate contingency plans, and promotional materials concerning Ministry and health sector emergency preparedness. Until the OHEP is fully operational, the Ministry should immediately post all contingency plans on the Ministry website.

Rec #25 Initial Report

57. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should immediately update and test a generic plan or standard operating protocol for the provincial response to infectious disease outbreaks and public health emergencies, including bioterrorism. This plan should be complete by June 2004 and should be posted on the OHEP or Ministry website as soon as it is complete. As an interim measure, the Ministry should post on its website a summary of the main roles and responsibilities of government and independent organizations in planning *and responding to public health emergencies* by February 1, 2004.

Rec #26 Initial Report

58. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should broadly disseminate contingency plans for pandemic influenza and smallpox by March 15, 2004. These plans should be posted on the Ministry website.

Rec #27 Initial Report

59. a. The Ministry, together with professional associations, regulatory colleges, and the OHEP in a coordinating and monitoring role once established, should continue to develop provincial registries to provide rapid deployment of healthcare personnel. An action plan for developing these registries should be presented to the Minister by February 1, 2004. Registries should be tested and evaluated within 12 months of their inception.

b. The Ministry should initiate the ongoing development of cross-jurisdictional mutual aid agreements with other provinces and territories that provide for appropriate health human resources deployment, inter-jurisdictional licensing of professionals, compensation and remuneration agreements, and provision of supplies and equipment. The Ministry should provide a status report on this review by April 1, 2004.

Rec #28 Initial Report

60. The Ministry, in conjunction with the Ontario Hospital Association (OHA), Canadian Hospital Association (CHA), and other appropriate organizations, should immediately examine the development of a specific code for Infectious Disease Outbreaks. Ideally, this code would be adopted nationally and be reflected in appropriate contingency planning at the provincial and federal levels.

Rec #29 Initial Report

61. The Ministry, along with the Ministry of the Attorney General and other appropriate Ministries, should conduct a thorough review of existing emergency powers and related legislation with a view to establishing a graduated system for responding to health emergencies. A status report on this review should be submitted to the Minister of Health and Long-Term Care and the Minister of Community Safety and Correctional Services by March 1, 2004.

As a second phase, the Ministry and the federal government should work together to ensure harmonization of emergency powers legislation by October 2004.

New

62. Upon completion of the legislative review, the Ministry should develop and implement heightened alert schemes for public health emergencies utilizing a range of methods as appropriate.

Health System Impact

New

63. The Ministry should be encouraged to formalize post-event evaluations using comprehensive and appropriate health system/service data to refine on an ongoing basis:

    a. provincial and local approaches to outbreaks and health emergencies; and,

    b. approaches to system recovery based on scientific and clinical evidence related to patient outcomes and access to health services e.g., returning healthcare institutions to pre-event operations.

Critical Care

New

64. The Ministry should develop an enhanced evidence-based approach to measure and monitor surge capacity and to ensure critical care accessibility to Ontario's critical care resources during periods of sudden and unexpected demand (surge) and usual demand.

Visitor Policy

New

65. The Ministry should, in collaboration with the Ontario Hospital Association, Ontario Long-Term Care Association and Ontario Association of Non-Profit Homes and Services for Seniors and other appropriate associations, establish guidelines for developing policies regarding visitor restrictions during a significant service interruption or public health emergency. The sample visitor policy included in this Report may be used to inform this process. Policies developed should recognize the importance of social support and should differentiate between visitors and access to key family members who are integral to the provision of patient care. There should be mechanisms to address exceptional circumstances.

New

66. The Ministry should, in collaboration with relevant associations, support the provision of clear and consistent information about visitor restrictions when these are in effect on a large scale and ensure that the rationale for these is made available to the public through appropriate vehicles.

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Quarantine

New

67. Public health officials should ensure that during any period of quarantine, regardless of the scope, that there is formal and regular two-way communication between Public Health Units and individuals and families under quarantine.

New

68. The Government of Ontario, as part of collaborative work with the federal government in relation to providing financial assistance during a public health emergency, should develop policies concerning appropriate compensation for individuals under quarantine.

Communications

Rec #30
Initial
Report

69. By February 15, 2004, the Ministry should ensure that a health sector communications infrastructure is in place to reach all key stakeholders in a health emergency. This infrastructure should enable use of e-mail, facsimile, Internet and other technologically advanced modalities. It should be two-way, multi-functional and enable the Ministry to reach healthcare practitioners, healthcare organizations and institutions, support staff, educational institutions, emergency medical services, professional associations, licensing bodies and unions. This infrastructure should be tested and evaluated by March 31, 2004.

    a. This infrastructure should facilitate the development of a formal Public Health Alert Network (PHAN), to provide communications concerning infectious disease outbreaks and public health threats to all healthcare providers.

    b. As critical to enabling this infrastructure, electronic literacy should be established as a basic standard of practice for all newly graduated healthcare practitioners within two years. Methods of ensuring the electronic competency of existing healthcare providers should be explored in collaboration with professional regulatory colleges within three years.

New

70. As part of the Ontario Health Protection and Promotion Agency, a Public Health Alert Network (PHAN) should be established and maintained to issue different types of health messages (alert, advisory, update) to key stakeholders based on agreed protocols. The Ontario Health Protection and Promotion Agency would activate PHAN on the direction of the Chief Medical Officer of Health as a means of supporting crisis and emergency response as well as preparedness at the local and provincial levels.

Rec #31 Initial Report

71. By January 15, 2004 the Ministry should review and update provincial crisis communications protocols to support the dissemination of information during a health emergency. These protocols should ensure:

   a. Early designation of a credible and consistent source of spokesperson(s) at the provincial level so as to deliver uniform and clear messages.

   b. Mechanisms are in place for two-way communications, which allow recipients to ask questions and receive clarification.

   c. Key personnel have specific communications training.

   d. Communications approaches are rapidly available in diverse languages and formats.

Rec #32 Initial Report

72. By March 1, 2004, the Ministry should develop a provincial public health risk communications strategy as part of overall contingency planning for a health emergency. This strategy should be based upon international best practices in risk communications, and should be shared with local and federal governments, and healthcare organizations to aid in the coordination of efforts and understanding of respective roles. The basis of this communications strategy should:

   a. Build on and upgrade the use of proven effective communications vehicles, such as the use of web-based systems during SARS.
   b. Include targeted approaches and tools for different audiences, such as healthcare providers and patients.
   c. Be based upon strong links with Public Health Units.
   d. Encourage and build upon public health risk communications networks.
   e. Clearly identify provincial spokeperson(s) in a health emergency, building on trust and credibility.
   f. Ensure that communications methods used during a health emergency are practical in nature. If directed to healthcare workers, communications should include proper techniques and best practices.
   g. Incorporate effective means of educating the public about necessary screening measures, changes to visitor policies, and temporary restrictions of healthcare services. This should include the production of standardized material and notices to distribute to patients.
   h. Make provisions for briefing sessions between the Ministry and healthcare providers, in the form of a webcast or other real-time

communication mechanism, shortly before any public broadcast on urgent matters of public health.

i. Clarify, update and streamline policies and procedures regarding the use of the media in an emergency. This should include the continued use of effective media buying services to deliver public service messages.
j. Optimize use of health information hotlines for the public as part of overall contingency planning.
k. Include mechanisms to evaluate performance.

New

73. The Ontario Health Protection and Promotion Agency should provide risk communications support and advice to the Ministry, Public Health Units, and other local healthcare providers and organizations including the Regional Communicable Disease and Infection Control Networks. To this end, the Ontario Health Protection and Promotion Agency should:

- support the Ministry of Health and Long-Term Care by providing technical and scientific advice regarding risk communications in general and with respect to specific topics or issues; and,

- establish and maintain a Risk Communications Network with the aim of increasing practitioners' (public health and communication) capacity to undertake and evaluate risk communication activities.

Rec #33 Initial Report

74. The Ministry should continue to liaise with Health Canada to ensure consistency and to clearly designate points of contact regarding risk communications plans. Formal memoranda of understanding should be reviewed and updated by March 1, 2004 so that they clearly outline roles and responsibilities. The Ministry should commit to review and update such agreements on a regular basis. Such reviews should include appropriate public health expertise and representation from OHEP.

Rec #34 Initial Report

75. The Ministry should immediately ensure that any written communication to healthcare providers during a health emergency is:
a. clear, concise, and operationally viable
b. based upon scientific evidence
c. supported by mechanisms for two-way communications and clarification.

Rec #35 Initial Report

76. By March 1, 2004, the Ministry should develop an enhanced plan to educate the public about possible or actual threats to public health and appropriate infection control measures. Healthcare organizations and professional associations should be engaged in developing and implementing this plan to ensure coordination of effort and to identify the most effective tools for healthcare providers to use in communicating with the public.

New

77. The Ministry should ensure that each Public Health Unit maintains core communications capacity that includes:

    a. public health risk communications;

    b. crisis communications during a health emergency as part of overall contingency planning;

    c. production and dissemination of public health materials;

    d. translation as determined by local need and coordinated with the Agency;

    e. participation in local and provincial networking opportunities for health communicators, such as a Risk Communications Network; and

    f. media relations.

New

78. Public Health Units should also be appropriately supported to develop processes and mechanisms at the local level to network and share information with other health communicators.

Surveillance

Rec #36 Initial Report

79. The Ministry should build on work undertaken to-date and develop a comprehensive, provincial infectious disease surveillance plan by June 30, 2004. This work should:

    a. be carried out by a multi-disciplinary group, which includes scientific, government, information technology and healthcare partners, and which is accountable to the Minister of Health and Long-Term Care;

b. involve aligning and clarifying the roles of all post-SARS provincial advisory committees with working groups examining the issue of disease surveillance;

c. examine any opportunities or barriers to using existing tools such as Telehealth and Telemedicine;

d. include province-wide surveillance for facility-acquired infections.

Rec #37 Initial Report

80. The Ministry must ensure that an appropriate information technology infrastructure is in place to fully support the provincial infectious disease surveillance plan by June 30, 2004.

New

81. An ongoing process and mechanism should be developed to disseminate information to stakeholders including surveillance and epidemiological information, research, best practice information, etc. The Ontario Health Protection and Promotion Agency will develop and support an Ontario Public Health Information System to enable this information sharing, with the aim of providing a specific portal to epidemiological and surveillance information as well as with analysis and trend information (including specific reports) to support practitioners and decision-makers.

Rec #38 Initial Report

82. The Ministry should expedite the full implementation of the Integrated Public Health Information System (iPHIS), together with any required design modifications, across all Public Health Units in the province by June 30, 2004.

Rec #39 Initial Report

83. The Ministry must move rapidly to fully implement the necessary information technology supports to allow for contact tracing and quarantine management by Public Health Units by June 30, 2004. If this cannot be accomplished through design modifications to iPHIS, other suitable information technology platforms must be used.

Rec #40 Initial Report

84. The Ministry should establish a working group with representation from healthcare stakeholders, researchers, and the Ministry to review on an urgent basis all data access and data sharing protocols between Public Health Units, the Ministry, municipalities, and the federal government. This review should identify how and to whom identifiable personal information is authorized to flow in the event of an outbreak. The working group should submit a report to the Minister by March 31, 2004 outlining the common data sharing structure, reporting relationships, and other common requirements of the data access and sharing protocols.

Rec #41 Initial Report

85. The Ministry should undertake a detailed legislative review of the *Freedom of Information and Protection of Privacy Act* and the *Municipal Freedom of Information and Protection of Privacy Act* in the context of:

   a the reporting requirements set out under the *Health Protection and Promotion Act*;

   b. identifying potential barriers to the sharing of information in appropriate and timely manner; and,

   c. ensuring appropriate protections for personal information.

   This review should be completed by March 31, 2004.

Health Human Resources

Enrollment

Rec #42 Initial Report

86. The Ministry, together with the Ministry of Training, Colleges and Universities and professional bodies, should continue to support new initiatives to increase the enrollment numbers of key health professions, including medicine, nursing, and respiratory therapy. In addition to work already underway, attention should be given to enhancing training opportunities in epidemiology, medical microbiology, occupational health and safety, community medicine, critical care, emergency and public health. Plans for increased training capacity in these key areas should be in place for the 2005/2006 academic year and reported publicly.

Staffing Strategies

Rec #43 Initial Report

87. The Ministry must immediately fund a minimum of two additional Medical Microbiologist positions for the Ontario Public Health Laboratory.

Rec #44 Initial Report

88. The Ministry, in collaboration with professional regulatory colleges and professional associations, should begin to develop new models for the efficient utilization of existing health human resources during a health emergency. As part of this process, consideration should be given to creative staffing models, and using professionals to their full scope of practice.

Rec #45 Initial Report

89. The Ministry should continue to establish sustainable employment strategies for nurses and other healthcare workers to increase the availability of full-time employment. Progress reports should be issued on an annual basis with a final goal of greater than 70% full-time employment across all healthcare sectors by April 1, 2005.

New 90. As part of the employment strategies to reduce the effects of casualization of the healthcare workforce, approaches such as creating centralized and integrated resource teams comprised of full-time employees, providing opportunities for cross training, increasing base staff allocation, and creating workforce databases should be considered.

Occupational Health and Safety

Rec #46 Initial Report 91. The Ministry, together with the Ministry of Labour, should initiate a joint review of current Occupational Health and Safety (OHS) policies, procedures, and resources in the healthcare sector. This should be completed by June 30, 2004.

Informed by the results of this review, the Ministry, the Ministry of Labour, healthcare providers, and relevant professional organizations should look to developing best practices in OHS, with a view toward defining the role of OHS during an infectious disease outbreak and the most appropriate interface between OHS and infection control programs.

Rec #47 Initial Report 92. The Ministry, together with the Ministry of Labour and professional associations, should support the ongoing development of best practices for the use of personal protective equipment by December 31, 2004. The Ministry should also ensure that, in conjunction with healthcare provider organizations, adequate vehicles are in place to educate appropriate groups of healthcare workers as to the proper use, and the associated evidence behind such uses, of personal protective equipment. In addition, Ontario should support both public and private sector research initiatives with respect to the efficacy and adverse effects of personal protective equipment.

New 93. Appropriate ministries within the Government of Ontario, in collaboration with relevant professional associations, should develop and/or disseminate clear shared guidelines regarding duty to care obligation of both employers and healthcare workers during a public health emergency. A sample duty to care policy included in this Report may be of use to inform this process.

New 94. Appropriate ministries within the Government of Ontario should support and encourage health care employers to develop necessary supports for employees as part of contingency planning for a health emergency. These should include appropriate education with respect to assessed risk, clear communication of disaster plans, and adequate psychological support services.

Psychological Support

Rec #48 Initial Report

95. The Ministry, in collaboration with professional associations and relevant experts, should develop a plan for the development and use of psycho-educational programs in emergency preparedness training. These programs should address the following:

    a. Preparing staff to deal with the consequences of emergency situations, including anxiety and depression;

    b. Developing coping skills.

    The programs should be developed by summer, 2004.

Rec #49 Initial Report

96. The Ministry, in collaboration with professional associations and healthcare employers, should ensure the availability of psychological support programs for healthcare workers as part of a robust plan for emergency management. These programs should:

    a. support all frontline workers;

    b. allow clear access to Employee Assistance Programs and other resources such as psychiatry;

    c. deal with issues of isolation and stigmatization;

    d. contacts and proactive approaches to manage work fatigue and workload stress.

    Coordinated planning in this area should be initiated by February 2004.

Compensation

Rec #50 Initial Report

97. The Ministry should formalize, as part of its contingency planning for health emergency plans, mechanisms to quickly put into place programs, such as the SARS Compassionate Assistance Compensation Program for Healthcare Workers, to provide compensation for income lost as a result of being unable to work while ill, quarantined, or restricted to one facility as the result of a health emergency.

Process Recommendations

To ensure accountability and to facilitate a coordinated approach to implementing this Report, the Panel offers the following recommendations:

Rec #51 Initial Report

98. The Ministry of Health and Long-Term Care should establish a single coordinating body to oversee implementation of the recommendations contained within this report, within the stipulated timelines.

Rec #52 Initial Report

99. The work of this coordinating body should be guided and supported by a multidisciplinary expert advisory group with representation from healthcare facilities and organizations, healthcare professionals and their associations, and the scientific community.

New

100. The Ministry of Health and Long-Term Care should proceed with implementation of public health renewal according to the multi-year implementation plan outlined in Chapter Four of this Final Report, and with additional funding to support the recommendations as proposed.

New

101. The Ministry should proceed with the development of a transition team reporting to the Chief Medical Officer of Health with responsibility to finalize the operational design and implementation plan for the Ontario Health Protection and Promotion Agency. The transition team should draw upon appropriate external expertise in the design of the Agency and develop a mechanism for appropriate and formal input from healthcare provider organizations.

Rec #53 Initial Report

102. In recognition of those affected by SARS and to ensure accountability to the public with respect to the implementation of these recommendations, the Minister of Health and Long-Term Care should table a progress report in the Legislature no later than December 2004.

New

103. The Ministry should prepare a multi-year plan to address the recommendations from the Panel. Progress on the plan as well as the recommendations should be tabled annually in the Legislature.

Implementation Priorities and Projected Costing for Key Recommendation Areas

B. Implementation Priorities

Year 1

IR: Initial Report

A. Establish a Transition Team within the Ministry and with appropriate external expert linkages

B. Transition Plan

- Develop a transition plan addressing the following areas:
  - a. Process for moving services from the Ministry to the Ontario Health Protection and Promotion Agency (the Agency)
  - b. Comparative review of IT requirements and supports needed for the Agency based on those existing in other North American jurisdictions
  - c. Initial review of capital and human resource requirements for the Agency with view to co-location of Public Health Laboratory
  - d. Process for establishment and recruitment of the Agency's Board
  - e. Process for appointment and recruitment of the Agency's CEO

C. Enabling Documents

- Begin drafting of founding legislation for the Agency
- Amend *Health Protection and Promotion Act* to increase independence of Chief Medical Officer of Health to speak on matters of public health significance
- Initiate negotiations relevant to the Agency-Ministry and Agency-federal agency relationships necessary for establishment of Memoranda of Understanding
- Initiate drafting of Memoranda of Understanding

D. Public Health

- Review *Mandatory Health Programs and Services Guidelines* to ensure consistency with public health goals and objectives (including risk communications)
- Complete review of existing Public Health Division capacity (IR#8)
- Undertake a review of public health at the local level with the following scope:
  - a. Determining core capacities needed
  - b. Identifying key operational, systemic and governance barriers to Public Health Unit functionality
  - c. Identifying core determining factors for Public Health Unit realignment
- Develop four-year transition plan for increased provincial funding responsibility for Public Health Units, including as a year 1 step ensuring 100% funding of 180 positions committed as part of the SARS Short-Term Action Plan (IR#4)

- Design and begin to implement a four-year Public Health Human Resource Revitalization Strategy (IR#3) – increased number of training positions, increased re-entry positions, increased continuing education opportunities to be implemented in year 1
- Undertake review of PHRED program

E. Laboratories

- Hire four additional medical microbiologists in addition to the medical director and microbiologists recommended in the Initial Report (IR# 43)
- Establish liaison capacity between the Public Health Division and the Central Public Health Laboratory, including appropriate technological links e.g., videoconferencing, and updates to information systems
- Undertake operational review of the Public Health Laboratory System

F. Communicable Disease and Infection Control

- Ensure adequate funding for infection control training and develop strategies to support health human resource requirements in infection control (IR#15,16,17)
- Establish Provincial Communicable Disease Committee by June 30, 2004
- Formalize agreements with and fund existing Regional Communicable Disease and Infection Control Network initiatives
- Identify at least five additional potential regional networks and prepare for their development by:
    a. Undertaking a review of the location and capacity of necessary core expertise, patient movement and referral patterns, population served;
    b. Sponsoring sessions to bring together necessary stakeholders for the development of the regional networks;
    c. Identifying funding requirements to support the implementation of regional networks province-wide.
- Undertake a review of all existing negative pressure and isolation rooms in support of the evidence-based needs assessment recommended in the Initial Report (IR#13)
- Begin development of the provincial component of a national surveillance plan, to be completed over three to five years, and identify necessary enablers (e.g., IT, legislative changes to enable information sharing) (IR#36, 37)

G. Emergency Preparedness

Ensure that adequate supplies and stockpile are in place for emergencies.

Year 2

A. Public Health

- Develop appropriate models for local Public Health Units' consolidation
- Establish and operationalize annual performance review for public health

B. Agency

- New Agency legislation passed through Legislature
- Undertake capital planning for the Agency
- Initiate process for appointment of CEO for the Agency

C. Communicable Disease and Infection Control

- Provincial Communicable Disease Committee to establish core indicators and all other activities within scope of mandate
- Develop and implement additional regional networks province-wide (activities include selecting lead organization, establishing steering committee, developing operational plan)
- Undertake review, against PCDC standards, to identify the barriers to infection control
- Facility remediation fund to address high priority design changes
- Targeted infection control program funding for hospitals and long-term care facilities

Year 3

A. Agency

- MOUs secured (Agency-MOHLTC-Feds)
- Appoint CEO for the Agency (Transition Team to report to CEO until completion of transition activities and Agency fully staffed and operational)
- Recruit and appoint the Agency Board
- Develop detailed Agency workplan building on Transition Plan developed in year 1

B. Communicable Disease and Infection Control

- Regional Communicable Disease and Infection Control Networks to be fully functional province-wide

C. Public Health

- Operationalize new local Public Health Unit model together with revised Mandatory Health Programs and Services Guidelines

Year 4

A. Agency

- The Agency is operational with respect to certain health protection activities (e.g., PCDC, Public Health Laboratory, PHAN, Risk Communication Network, OPHIS)
- First Performance Plan developed and in place, including plan for evaluation

B. Public Health

- Undertake review of health promotion activities for possible incorporation into the Agency

Year 5

A. Agency

- Operations annualized at $45m

B. Public Health

- Continuation of funding

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Projected Costing for Key Recommendation Areas

Agency – General	YR1	YR2	YR3	YR4	YR5	Total Year 5 Base Cost
Initial Design and Transition Planning (Transition Team)	$5 M (one time)	$5 M (one time)	$5 M (one time)			
Operations[1] • surveillance coordination • epidemiology • communications • research • knowledge transfer • training • Central Public Health Laboratory[2]			$10 M	$20 M	$45 M	**$45 M**
Capital Planning and Design (Laboratory and Agency)		$3.5 M (one time)				
Construction (Laboratory and Agency)			$35 M (one time)[3]			
TOTAL • **One time costs** • **Base costs**	 **$5 M** **$5 M**	 **$8.5 M** **$5 M**	 **$40 M** **$10 M**	 **$20 M**	 **$45 M**	 **$45 M**

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[1] Numbers reflect estimated new expenditures required (excluding relevant current central Public Health Laboratory and other appropriate funding which could be reallocated to these areas). Total final costs dependent upon review in Year 3 of operations.
[2] Excludes existing central Public Health Laboratory operating costs
[3] Actual cost dependant upon: (a) functional review; (b) opportunities for co-location/co-construction; (c) potential federal contributions

Agency - Laboratory	YR1	YR2	YR3	YR4	YR5	Total Year 5 Base Cost
Liaison laboratory positions within Public Health Division	$0.4 M →					**$0.4 M**
Operational Review of Public Health Laboratory	$0.5 M (one time)					
Microbiologist and Medical Director Positions	$1 M →	+ TBD[4]	+ TBD[4]	+ TBD[4]	+ TBD[4]	**$1 M + TBD[4]**
Videoconference Link (PHD – Public Health Labs)	$0.15 M (one time)					
TOTAL • **One time costs** • **Base costs**	**$0.65 M** **$1.4 M**	**$1.4 M[4]**	**$1.4 M[4]**	**$1.4 M[4]**	**$1.4 M[4]**	**$1.4 M[4]**

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[4] Additional net costs may be determined through operational review of Public Health Laboratory

Public Health	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**Total Year 5 Base Cost**
PHRED Review	$0.25 M (one time)					
PHRED activities[5]		$1.5M →				**$1.5 M**
Public Health Division Capacity Review	$0.25 M (one time)					
Heath Protection and Promotion Act Compliance Monitoring	$0.25 M →					**$0.25 M**
Public Health Review at the Local Level	$1 M (one time)					
Municipal/Provincial Cost Share Shift[6]	$8 M	$20 M	$50 M	$95 M →		**$95 M**
Performance Report for Public Health	$0.25 M	$0.75 M →				**$0.75 M**
Public Health Human Resource Revitalization[7]	$1 M	$2 M	$3.5 M →			**$3.5 M**
TOTAL • **One time costs** • **Base costs**	**$1.5 M** **$9.5 M**	**$24.5 M**	**$56 M**	**$101 M**	**$101 M**	**$101 M**

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[5] Actual amounts dependent on findings of PHRED review.

[6] Amounts are approximate and reflect the minimum to achieve a 75% Provincial and 25% Municipal cost-share for Public Health. Amounts may be modified by results of Public Health Unit Capacity and Governance Review.

[7] Amounts may be modified by Public Health Unit Capacity and Governance Review.

Communicable Disease and Infection Control	YR1	YR2	YR3	YR4	YR5	Total Year 5 Base Cost
Training:						
Infection Control Training (College courses)	$1.5 M	$2.5 M	$5 M →			**$5 M**
Train-the-trainer initiatives	$0.75 M	$2 M →				**$2 M**
On-line and distance training initiatives	$0.75 M	$1.25 M →				**$1.25 M**
Core Curriculum Review	$0.25 M (one time)					
Surveillance and Monitoring:						
Nosocomial Indicator Development	$0.2 M	$0.75 M →				**$0.75 M**
Nosocomial Indicator Reporting System			$1 M	$3 M →		**$3 M**
Provincial Communicable Disease Committee (staffing support)	$0.75 M →					**$0.75 M**
Regional Communicable Disease and Infection Control Networks (RCDICN)	$5 M	$10 M	$15 M	$17 M →		**$17 M**
Facility Design Review[8]		$1.75 M (one time)				

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[8] Review to be undertaken against PCDC standards for facility design.

Communicable Disease and Infection Control	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**Total Year 5 Base Cost**
Facility Remediation[9]		$10 M (one time)	$20 M (one time)	$40 M (one time)		
Targeted Infection Control Program Funding for hospitals and LTC		$5 M	$10 M	$15 M →	→	**$15 M**
TOTAL - **One time costs** - **Base costs**	**$0.25 M** **$8.95 M**	**$11.75 M** **$22.75 M**	**$20 M** **$35.75 M**	**$40 M** **$44.75 M**	**$44.75 M**	**$44.75 M**

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[9] Amounts to be allocated to high priority remediation only based upon Facility Design Review.

Technology Supports	YR1	YR2	YR3	YR4	YR5	Total YR 5 Base Cost
Agency IT Development (OPHIS, PHAN, etc.)[10]	$0.5 M (one time)	$4 M (one time)	$10 M (one time)	$0.5 M →	→	**$0.5 M**
Provincial Communicable Disease Committee webpage[9]	$0.25 M →	→	→	→	→	**$0.25 M**
Regional Communicable Disease and Infection Control Network IT Support[9]	$0.5 M	$1.5 M	$3.5 M →	→	→	**$3.5 M**
TOTAL • **One time costs** • **Base costs**	**$0.5 M** **$0.75 M**	**$4 M** **$1.75 M**	**$10 M** **$3.75 M**	**$4.25 M**	**$4.25 M**	**$4.25 M**

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[10] Once Agency is operational, IT costs will be subsumed into overall budget. NOTE: This costing assumes Ontario access to funds for surveillance in the range of $30 M through the federally announced $100 M allocated to Canada Health Infoway.

Critical Care/Emergency Response	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**Total Year 5 Base Cost**
CritiCall Review	$0.25 M (one time)					
Development of Critical Care System/Network (planning support)	$0.6 M (one time)					
Critical Care System/Network Operations	$1.2 M	$1.5 M →	→	→	→	**$1.5 M**
Emergency Management Unit Staff Extension	$0.7 M →	→	→	→	→	**$0.7 M**
TOTAL • **One time costs** • **Base costs**	**$0.85 M** **$1.9 M**	**$2.2 M**	**$2.2 M**	**$2.2 M**	**$2.2 M**	**$2.2 M**

▶ Summary Total Base Costs

	YR1	YR2	YR3	YR4	YR5
Agency/Laboratory	$6.4 M	$6.4 M	$11.4 M	$21.4 M	$46.4 M
Public Health	$9.5 M	$24.5 M	$56 M	$101 M	$101 M
Communicable Disease and Infection Control	$8.95M	$22.75 M	$35.75 M	$44.75 M	$44.25 M
Technology Supports	$0.75 M	$1.75 M	$4.25 M	$4.25 M	$4.25 M
Critical Care/Emergency Response	$1.9 M	$2.2 M	$2.2 M	$2.2 M	$2.2 M
TOTAL	**$27.5 M**	**$57.6 M**	**$109.6 M**	**$173.6 M**	**$198.1 M***

* This costing is undertaken without benefit of knowing a) full federal response to the Report of the National Advisory Committee on SARS and Public Health, b) the potential Ontario contribution of recently announced federal public health funding, and c) potential cost savings that could be achieved through co-location at the Agency level. There is clear potential for the final cost to be reduced based upon appropriate federal contribution. NOTE: These costs assume existing expenditures at Central PHL re retained and refocused to the Agency.

Appendices

Appendix 1: Terms of Reference

Expert Panel on SARS and Infectious Disease Control

Terms of Reference

The purpose of Ontario's Expert Panel on Infectious Disease Control is to review the ability of Ontario's Healthcare System to effectively maintain services during and appropriately respond to future infectious disease emergencies using lessons learned during Ontario's SARS emergency. The Expert Panel will draw upon the best multi-disciplinary and sectoral expertise to achieve this objective.

Mandate

To determine the key lessons learned in the Ontario health system handling of the SARS outbreak and with this understanding, provide practical, focused and forward-looking advice on all appropriate health system measures to strengthen infectious disease control on a sectoral and system-wide level in Ontario.

To provide advice and recommendations to the Minister of Health and Long-Term Care on the design and implementation of planned and future infectious disease management initiatives; including assessing required reserve/surge capacity in the system, research and measures to strengthen infection control, public health and system response capabilities.

Objectives

- Review the ability of Ontario's Healthcare System to effectively maintain services during and appropriately respond to future infectious disease emergencies using lessons learned during Ontario's SARS emergency. Reports should focus on the systemic, procedural, informational, cultural and organizational lessons learned for the future in order to build upon our successes and benefit from an improved health system capacity to respond.

- Build upon the spirit of cooperation that has guided Ontario through the crisis to date and identify the key measures required to strengthen Ontario capacity to prevent, respond to and manage future infectious diseases on a system-wide level.

- Produce practical, focused and forward looking advice pertaining to all levels and sectors regarding future approaches to Infectious Disease Control. Special emphasis should be placed upon learnings regarding SARS that are transferable to the prevention, identification and management of other infectious disease outbreaks in the future.

Composition

- The Panel shall be comprised of a Chair, and members with recognized expertise in their respective fields.

- Ex-officio members will be appointed as required.

Timing

- The Expert Panel shall have a sunset date of December 31st 2003 unless reasonable extension is granted by the Minister of Health and Long-Term Care.

- The Expert Panel shall produce an interim report within a timeframe of no longer than two months.

Appendix 2:
A Comparison between CDC's Essential Public Health Services and PAHO's Essential Public Health Functions

A Comparison between CDC's Essential Public Health Services and PAHO's Essential Public Health Functions[1]

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
#1. Monitor health status to identify community health problems	**#1. Monitoring, evaluation and analysis of health status**
For local: 1. Accurate, periodic assessment of the community's health status, including: a. Identification of health risks and determination of health service needs. b. Attention to the vital statistics and health status of groups that are at higher risk than the total population. c. Identification of community assets and resources that support the local public health system (LPHS) in promoting health and improving quality of life. 2. Utilization of appropriate methods and technology, such as geographic information systems, to interpret and communicate data to diverse audiences. 3. Collaboration among all LPHS components, including private providers and health benefit plans, to establish and use population health information systems, such as disease or immunization registries. For state: 1. Assessment of a statewide health status and its threats and the determination of health service needs. 2. Attention to the vital statistics and health status of specific groups that are at higher risk of heath threats than the general population. 3. Identification of community assets and resources, which support the SPHS in promoting health and improving quality of life. 4. Utilization of technology and other methods to interpret and communicate health information to diverse audiences in different sectors. 5. Collaboration in integrating and managing public health related information systems. For governance: 1. Accurate, periodic assessment of the	2. Up to date evaluation of the country's health situation and trends including their determinants, with special emphasis on identifying inequities, in risks, threats and access to services. 3. Identification of the population's health needs including an assessment of health risks and the demand for health services. 4. Management of vital statistics and the status of special groups or groups at greater risk. 5. Generation of useful information for the assessment of the performance of health services. 6. Identification of those non-sectoral resources that support health promotion and improvements in the quality of life. 7. Development of technology, expertise and methodologies for management, analysis and communication of information to those responsible for public health (including key players from other sectors, health care providers, and civil society). 8. Identifying and establishing agencies that evaluate and accurately analyze the quality of collected data.

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[1] Sources: a) CDC Essential Public Health Services: accessed from the CDC's National Public Health Performance Standards Program website: http://www.phppo.cdc.gov/nphpsp/10EssentialPHServices.asp (accessed on February 24, 2004), these services include responsibilities local and state governments as well as governing bodies at the local level, and b) PAHO Essential Public Health Functions: PAHO. *Public Health in the Americas* 2002.

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
community's health status, including: a. Identification of health risks (determinants of health) and determination of health service needs; b. Attention to the vital statistics and health status indicators of groups that are at higher risk than the total population; and c. Identification of community assets that support the LPHS in promoting health and improving quality of life. 2. Utilization of appropriate methods and technology, such as geographic information systems (GIS), to interpret and communicate data to diverse audiences. 3. Collaboration among all LPHS components, including private providers and health benefit plans, to establish and use population health registries, such as disease or immunization registries.	
#2. Diagnose and investigate health problems and health hazards in the community	**#2. Public health surveillance, research and control of risks and threats to public health**
For local: 1. Epidemiological investigations of disease outbreaks and patterns of infectious and chronic diseases and injuries, environmental hazards, and other health threats. 2. Active infectious disease epidemiology programs. 3. Access to a public health laboratory capable of conducting rapid screening and high volume testing. For state: 1. Epidemiologic investigation of disease outbreaks and patterns of infectious and chronic diseases, injuries, and other adverse health conditions. 2. Population-based screening, case finding, investigation, and the scientific analysis of health problems. 3. Rapid screening, high volume testing, and active infectious disease epidemiology investigations. For governance: 1. Epidemiologic investigations of disease outbreaks, patterns of infections, chronic diseases, injuries, environmental hazards, and other heath threats. 2. Active infectious disease epidemiology	1. The capacity to conduct research and surveillance of epidemic outbreaks, patterns of communicable and non-communicable disease, behavioural factors, accidents and exposure to toxic substances or environmental agents harmful to health. 2. A public health services infrastructure designed to conduct population screenings, case finding, and general epidemiological research. 3. Public health laboratories capable of conducting rapid screening and processing of a high volume of tests necessary for identifying and controlling emerging threats to health. 4. The development of active programs for epidemiological surveillance and control of infectious diseases. 5. The capacity to develop links with international networks that permit better management of relevant health problems. 6. Preparedness of the National Health Authority and strengthening of local health surveillance to initiative a rapid response for the control of health problems or specific risks.

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
programs. 3. Access to a public health laboratory capable of conducting rapid screening and high volume testing.	
#3. Inform, educate and empower people about health issues	**#3. Health Promotion**
For local: 1. Health information, health education, and health promotion activities designed to reduce health risk and promote better health. 2. Health communication plans and activities such as media advocacy and social marketing. 3. Accessible health information and educational resources. 4. Health education and health promotion program partnerships with schools, faith communities, work sites, personal care providers, and others to implement and reinforce health promotion programs and messages. For state: 1. Health information, health education, and health promotion activities designed to reduce health risk and promote better health. 2. Health communication plans and activities such as media advocacy and social marketing. 3. Accessible health information and educational resources. 4. Health education and promotion program partnerships with schools, faith communities, work sites, personal care providers, and others to implement and reinforce health promotion programs and messages. For governance: 1. Health information, health education, and health promotion activities designed to reduce health risk and promote better health. 2. Health communication plans and activities such as media advocacy and social marketing. 3. Accessible health information and educational resources. 4. Health education and health promotion program partnerships with schools, faith communities, work sites, personal care providers, and others to implement and reinforce health promotion programs and messages.	1. The promotion of changes in lifestyle and environmental conditions to facilitate the development of a "culture of health". 2. The strengthening of inter-sectoral partnerships for more effective health promotion activities. 3. Assessment of the impact of public policies on health. 4. Educational and social communication activities aimed at promoting healthy conditions, lifestyles, behaviours and environments. 5. Reorientation of the health services to develop models of care that encourage health promotion.

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
#4. Mobilize community partnerships to identify and solve health problems	**#4. Social participation in health**
For local: 1. Identifying potential stakeholders who contribute to or benefit from public health, and increase their awareness of the value of public health. 2. Building coalitions to draw upon the full range of potential human and material resources to improve community health. 3. Convening and facilitating partnerships among groups and associations (including those not typically considered to be health-related) in understanding defined health improvement projects, including preventive, screening, rehabilitation, and support programs. For state: 1. The organization and leadership to convene, facilitate, and collaborate with statewide partners (including those not typically considered to be health-related) to identify public health priorities and create effective solutions to solve state and local health problems. 2. The building of a statewide partnership to collaborate in the performance of public health functions and essential services in an effort to utilize the full range of available human and material resources to improve the state's health status. 3. Assistance to partners and communities to organize and undertake actions to improve the health of the state's communities. For governance: 1. Identifying potential stakeholders who contribute to or benefit from public health and increasing their awareness of the value of public health. 2. Building coalitions to draw upon the full range of potential human and material resources to improve community health. 3. Convening and facilitating partnerships among groups and associations (including those not typically considered to be health-related) in undertaking defined health improvement projects, including preventive, screening, rehabilitation, and support programs.	1. Strengthening the power of civil society to change their lifestyles and plan an active role in the development of healthy behaviours and environments in order to influence the decisions that affect their health and their access to adequate health services. 2. Facilitating the participation of the community in decisions and actions with regard to programs for disease prevention, diagnosis, treatment and restoration of health in order to improve the health status of the population and promote environments that foster healthy lifestyles.

CDC's Essential Public Health Services and Definitions	PAHO's Essential Public Health Functions and Definitions
#5. Develop policies and plans that support individual and community health efforts	**#5. Development of policies and institutional capacity for planning and managing public health**
For local: 1. An effective governmental presence at the local level. 2. Development of policy to protect the health of the public and to guide the practice of public health. 3. Systematic community-level and state-level planning for health improvement in all jurisdictions. 4. Alignment of LPHS resources and strategies with the community health improvement plan. For state: 1. Systemic health planning that relies on appropriate data, develops and tracks measurable health objectives, and establishes strategies and actions to guide community health improvement at the state and local levels. 2. Development of legislation, codes, rules, regulations, ordinances and other policies to enable performance of the Essential Public Health Services, supporting individual, community, and state health efforts. 3. The democratic process of dialogue and debate between groups affected by the proposed health plans and policies is needed prior to adoption of such plans and policies. For governance: 1. Effective local public health governance. 2. Development of policy, codes, regulations, and legislation to protect the health of the public and to guide the practice of public health. 3. Systemic LPHS and state-level planning for health improvement in all jurisdictions. 4. Alignment of LPHS resources and strategies with community health improvement plans.	1. The definition of national and sub-national public health objectives which should be measurable and consistent with a values-based framework that favours equity. 2. The development, monitoring and evaluation of policy decisions in public health through a participatory process that is consistent with the political and economic context in which the decisions are made. 3. The institutional capacity for the management of public health systems, including strategic planning with emphasis on building, implementing and evaluating initiatives designed to focus on health problems of the population. 4. The development of competencies for evidence-based decision-making planning and evaluation, leadership capacity and effective communication, organizational development and resource management. 5. Capacity-building for securing international cooperation in public health.
#6. Enforce laws and regulations that protect health and ensure safety	**#6. Strengthening of institutional capacity for planning and management in public health**
For local: 1. The review, evaluation, and revision of laws and regulations designed to protect health and safety to assure that they reflect	1. The institutional capacity to develop the regulatory and enforcement frameworks that protect public health and monitor compliance within those frameworks.

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
current scientific knowledge and best practices for achieving compliance. 2. Education of persons and entities obligated to obey or to enforce laws and regulations designed to protect health and safety in order to encourage compliance. 3. Enforcement activities in areas of public health concern, including, but not limited to the protection of drinking water; enforcement of clean air standards; regulation of care provided in health care facilities and programs; re-inspection of workplaces following safety violations; review of new drug, biologic, and medical device applications; enforcement of laws governing the sale of alcohol and tobacco to minors; seat belt and child safety seat usage; and childhood immunizations. For state: 1. The review, evaluation, and revision of laws and regulations designed to protect health and safety to assure that they reflect current scientific knowledge and best practices for achieving compliance. 2. Education of persons and entities obligated to obey or to enforce laws and regulations designed to protect health and safety in order to encourage compliance. 3. Enforcement activities in areas of public health concern, including, but not limited to the protection of drinking water; enforcement of clean air standards; regulation of care provided in health care facilities and programs; reinspection of workplaces following safety violations; review of new drug, biological, and medical device applications; enforcement of laws governing the sale of alcohol and tobacco to minors; seat belt and child safety seat usage; and childhood immunizations. For governance: 1. Assurance of due process and recognition of individuals' civil rights in all procedures, enforcement of laws and regulations, and in public health emergency actions taken under the board of health or other governing body's authority. 2. Review, evaluation and revision of laws and regulations designed to : • Protect health and safety; • Reflect current scientific	2. The capacity to generate new laws and regulations aimed at improving public health, as well as promoting healthy environments. 3. Consumer protection as it relates to health services. 4. Carrying out all of these activities to ensure full, proper, consistent and timely compliance with the regulatory and enforcement frameworks.

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
knowledge; and ▪ Utilize best practice for achieving compliance. 3. Education of persons and entities obligated to obey and agencies obligated to enforce laws and regulations to encourage compliance. 4. Enforcement activities in a wide variety of areas of public health concern under authority granted by local , state and federal rule or law including, but not limited to: abatement of nuisances, animal control, childhood immunizations and other vaccinations, food safety, housing code, local sanitary code, on site wastewater disposal (septic systems), protection of drinking water, school environment, solid waste disposal, swimming pool and bathing area safety and water quality, tobacco control, and vector control. 5. Assuring prevention of illness by: ▪ Following-up on hazards; ▪ Reducing exposure to disease in occupational and community settings; ▪ Increasing vaccination rates. 6. Assuring monitoring of the quality of medical services available to the LPHS.	
#7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable	**#7. Evaluation and promotion of equitable access to necessary health services**
For local: 1. Identifying populations with barriers to personal health services. 2. Identifying personal health service needs of populations with limited access to a coordinated system of clinical care. 3. Assuring the linkage of people to appropriate personal health services through coordination of provider services and development of interventions that address barriers to care (e.g., culturally and linguistically appropriate staff and materials, transportation services). For state: 1. Assessment of access to and availability of quality personal health care services for the state's population. 2. Assurances that access is available to a	1. The promotion of equity of access by civil society to necessary health services. 2. The development of actions designed to overcome barriers when accessing public health interventions and help link vulnerable groups to necessary health services (does not include the financing of health care). 3. The monitoring and evaluation of access to necessary health services offered by public and/or private providers and using a multi-sectoral, multiethnic and multicultural approach to facilitate working with diverse agencies and institutions to reduce injustices and inequities in use of necessary health services. 4. Close collaboration with governmental and nongovernmental institutions to promote

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
coordinated system of quality care which includes outreach services to link population to preventive and curative care, medical services, case management, enabling social and mental health services, culturally and linguistically appropriate services, and health care quality review programs. 3. Partnership with public, private, and voluntary sectors to provide populations with a coordinated system of health care. 4. Development of a continuous improvement process to assure the equitable distribution of resources for those in greatest need. For governance: 1. Assuring the identification of populations with barriers to personal health services. 2. Assuring identification of personal health service needs of populations with limited access to a coordinated system of clinical care. 3. Assuring the linkage of people to appropriate personal health services through coordination of provider services and development of interventions that address barriers to care (e.g., culturally and linguistically appropriate staff and materials, transportation services).	equity able access to necessary health services.
#8. Assure a competent public and personal health care workforce	**#8. Human resource development and training in public health**
For local: 1. Assessment of workforce (including volunteers and other lay community health workers) to meet community needs for public and personal health services. 2. Maintaining public health workforce standards, including efficient processes for licensure/credentialing of professional and incorporation of core public health competencies needed to provide the Essential Public Health Services into personnel systems. 3. Adoption of continuous quality improvement and life-long learning programs for all members of the public health workforce, including opportunities for formal and informal public health leadership development. For state: 1. Education, training, development, and	1. The development of a public health workforce profile in public health that is adequate for carrying out public health services. 2. Educating, training, developing and evaluating the public health workforce to identify the needs of public health services and health care, efficiently address priority public health activities. 3. The definition of licensure requirements for health professionals in general and the adoption of ongoing programs that improve the quality of public health services. 4. Formation of active partnerships with programs for professional development to ensure that all students have relevant public health experience and receive continuing education in the management of human resources and leadership

CDC's Essential Public Health Services and Definitions	PAHO's Essential Public Health Functions and Definitions
assessment of health professional - including partners, volunteers and other lay community health workers - to meet statewide needs for public and personal health services. 2. Efficient processes for credentialing technical and professional health personnel. 3. Adoption of continuous quality improvement and life-long learning programs. 4. Partnerships with professional workplace development programs to assure relevant learning experiences for all participants. 5. Continuing education in management, cultural competencies, and leadership development programs. For governance: 1. Education, training, and assessment of personnel (including volunteers and other lay community health workers) to meet community needs for public and personal health services. 2. Efficient processes for licensure of professionals. 3. Adoption of continuous quality improvement and life-long learning programs that include determinants of health. 4. Active partnerships with professional training programs to assure community-relevant learning experiences for all students. 5. Continuing education in management and leadership development programs for those charged with administrative/ executive roles.	development in public health. 5. The development of skills necessary for interdisciplinary, multicultural work in public health. 6. Bioethics training for public health personnel, emphasizing the principles and values of solidarity, equity and respect for human dignity.
#9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services	**#9. Quality assurance in personal and population based health services**
For local: 1. Assessing the accessibility and quality of services delivered and the effectiveness of personal and population-based programs provided. 2. Providing information necessary for allocating resources and reshaping programs. For state: 1. Evaluation and critical review of health program, based on analysis of health status and service utilization data, are conducted	1. The promotion of systems that evaluate and improve quality. 2. Facilitating the development of standards required for a quality assurance and improvement system and oversight of compliance of service providers with this obligation. 3. The definition, explanation, and assurance of user rights. 4. A system for health technology assessment that supports the decision-making process at all levels and

CDC's Essential Public Health Services and Definitions	**PAHO's Essential Public Health Functions and Definitions**
to determine program effectiveness and to provide information necessary for allocating resources and reshaping programs for improved efficiency, effectiveness, and quality. 2. Assessment of and quality improvement in the State Public Health System's performance and capacity. For governance: 1. Assurance of ongoing evaluation and critical review of health programs effectiveness based on analysis of health status and service utilization data. 2. Assurance of the provision of information necessary for allocating resources and reshaping programs.	contributes to quality improvement. 5. Using the scientific methods to evaluate health interventions of varying degrees of complexity. 6. Systems to evaluate user satisfaction and application of its results to improve the quality of health services.
#10. Research for new insights and innovative solutions to health problems	**#10. Research on public health**
For local: 1. A continuum of innovative solutions to health problems ranging from practical field-based efforts to foster change in public health practice, to more academic efforts to encourage new directions in scientific research. 2. Linkages with institutions of higher learning and research. 3. Capacity to mount timely epidemiological and health policy analyses and conduct health systems research. For state: 1. A full continuum of research ranging from field-based efforts to foster improvements in public health practice to formal scientific research. 2. Linkage with research institutions and other institutions of higher learning. 3. Internal capacity to mount timely epidemiologic and economic analysis and conduct needed health services research. For governance: 1. Local public health research activities: ▪ Initiating research, ▪ Participating in research by others, ▪ Reporting results, and ▪ Implementing policy based on these results.	1. Rigorous research aimed at increasing knowledge to support decision-making at the various levels. 2. The implementation and development of innovative solutions in public health whose impact can be measured and assessed. 3. The establishment of partnerships with research centres and academic institutions from within and outside the health sector to conduct timely studies that support decision-making of the National Health Authority at all its levels and in all its fields of action.

CDC's Essential Public Health Services and Definitions	PAHO's Essential Public Health Functions and Definitions
	#11. Decreasing emergencies and disasters in health including prevention, mitigation, preparedness, response and rehabilitation
	1. Policy development, planning and execution of activities in the prevention, mitigation, preparedness, early response and rehabilitation programs to reduce the impact of disasters on public health. 2. An integrated approach with respect to the damage and etiology of any and all emergencies and disasters that can affect the country. 3. Involvement of the entire health system and the broadest possible inter-sectoral and inter-institutional collaboration to reduce the impact of emergencies and disasters. 4. The procurement of inter-sectoral and international collaboration to respond to health problems resulting from emergencies and disasters.

Glossary

Glossary of Acronyms and Abbreviations

ACCD	Advisory Committee on Communicable Diseases
Agency	Ontario Health Protection and Promotion Agency
alPHa	Association of Local Public Health Agencies
BCCDC	British Columbia Centre for Disease Control
CCAC	Community Care Access Centre
CCN	Cardiac Care Network
CCO	Cancer Care Ontario
CHC	Community Health Centre
CHICA	Community and Hospital Infection Control Association
CIHI	Canadian Institute for Health Information
CIHR	Canadian Institutes of Health Research
CMOH	Chief Medical Officer of Health
CSS	Coordinated Stroke Strategy
DCDIC	Department of Communicable Disease and Infection Control
EAC/Epi-Centre	Epidemiologic Analysis Centre
EHS	Emergency Health Services
EMO	Emergency Management Ontario
EMU	Emergency Management Unit (Ministry of Health and Long-Term Care)
F/P/T	Federal/Provincial/Territorial
GTA	Greater Toronto Area
HEPA	High Efficiency Particulate Air

HPA	Health Protection Agency (U.K.)
HPPA	Health Protection and Promotion Act
ICES	Institute for Clinical Evaluative Sciences
iPHIS	Integrated Public Health Information System
IT	Information Technology
LTC	Long-Term Care [facility]
Ministry	Ministry of Health and Long-Term Care
MOU	Memorandum of Understanding
MRI	Magnetic Resonance Imaging
MRSA	Methicillin-resistant *Staphylococcus aureus*
NGO	Non-governmental Organization
Agency	Ontario Health Protection and Promotion Agency (OHPPA)
OHS	Occupational Health and Safety
OPHIS	Ontario Public Health Information System
OPHL	Ontario Public Health Laboratory
PAHO	Pan American Health Organization
Panel	Expert Panel on SARS and Infectious Disease Control
PCDC	Provincial Communicable Disease Committee
PHAN	Public Health Alert Network
PHD	Public Health Division (Ministry of Health and Long-Term Care)
PHERO	Public Health and Epidemiology Report Ontario
PHRED	Public Health Research, Education and Development

QMP-LS	Quality Management Program - Laboratory Services
RCN	Risk Communications Network
RDIS	Reportable Disease Information System
RN	Registered Nurse
RPN	Registered Practical Nurse
SARS	Severe Acute Respiratory Syndrome
TPH	Toronto Public Health
UHN	University Health Network
WHO	World Health Organization